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Before submitting manuscripts for publication authors should consult Information for Contributors to the Journal of Speech and Hearing Disorders, *JSHD*, 14, 1949, 93-94. Prospective authors are invited to write the Editor for copies of this Note, and of its supplement, Examples of Manuscript Form.

The American Speech and Hearing Association
THIRTIETH ANNUAL CONVENTION
October 25-27, 1954, Hotel Jefferson, St. Louis
FORMAL CALL FOR PAPERS

ABSTRACTS of papers for presentation at the Annual Convention will be received by the Program Committee until June 15, 1954. Titles alone cannot be considered, but must be accompanied by an abstract. All abstracts should be sent directly to Gordon E. Peterson, Department of Speech, The University of Michigan, Ann Arbor, Michigan. Non-members may submit abstracts, but must be sponsored by a Member.

The abstract should indicate (1) the full title of the paper, (2) the name of the contributor and his professional affiliation, (3) a summary of the content of the paper, (4) the time required for presentation, and (5) details on any equipment needed for the presentation. Ten or fifteen minutes is recommended for presentation time. Longer papers will be considered, but can be accepted only if they are appropriate to one of the sectional meetings and are of particularly high quality.

Papers are invited on all aspects of the speech and hearing processes and human communication. Abstracts of papers dealing with fundamental theoretical work in these fields are encouraged, and abstracts of papers dealing with experimental studies of the speech and hearing processes and their disorders are invited. Abstracts of papers on practical techniques in speech and hearing diagnosis and therapy and on professional procedures are invited.

It is hoped that a place can be made on the coming convention program for a large majority of the papers for which abstracts are submitted. Each abstract will be given careful consideration. While it is the desire of the Program Committee to give a major consideration to contributed papers, acceptance must depend, of course, upon the quality of the material submitted. In unusual cases the Program Committee may request a copy of the completed paper for examination.

The submission of an abstract implies that the contributor accepts the following responsibilities: (1) He must be present in person to present his paper. When circumstances develop which prohibit his attendance he should notify the chairman of his section meeting as far in advance as possible. (2) He must be prompt in attendance at the meeting for which he is scheduled and must keep within the time limits indicated in the printed program. (3) He must notify the Chairman of the Committee on Local Arrangements of all equipment which he will require for the presentation of his paper. The chairman of the Committee on Local Arrangements for this year is Allan C. Goodman, Washington University Medical School, 640 South Kingshighway, St. Louis 10, Missouri.

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The Development And Evaluation Of A Speech Improvement Program For Kindergarten Children

Betty Ann Wilson

SINCE THE introduction of public school speech therapy programs, emphasis has been placed on the modification or elimination of major speech problems. This tendency has resulted in therapy for the few rather than help for every student. It is generally believed, however, that 'good speech should be considered a necessity for all rather than a luxury for the few' (*4*). If good speech for all students is to be sought, public school speech therapy programs must be expanded in order to provide help for more students than are now receiving it.

This study is concerned with the development of good speech for all kindergarten children. Public schools have, in many instances, been unable to provide comprehensive speech training programs for all students because of the lack of necessary finances and because of the shortage of trained speech therapists. Those therapists already engaged in public school work have been unable to expand the speech programs because of overcrowded schedules. In most instances, they are not even providing therapy for all students having major speech problems. As a consequence, some children have difficulties which probably could have been prevented or at least decreased.

With full cognizance of the problem involved, but with persistent conviction that practical ways and means must be devised in order that schools may provide resources for the growth and maturation of all their pupils, a program of speech improvement was developed in the Lafayette, Indiana, City Schools.

The term, speech improvement, is used in the literature to indicate numerous ideas. Ainsworth (*1*), however, presented a definition which is acceptable and applicable to this study:

> The term, speech improvement, as used here means group work done with whole classes or grades at one time. The objectives are to raise the general speech performance of the group and to minimize or correct minor defects of some of the individuals in the group.

The experimenter attempted to locate all source material and information which might be utilized for speech improvement lessons. Most of the material available for kindergarten children consisted of jingles, games, and drill exercises which could be used for both speech correction and speech improvement lessons. While there is a growing recognition of the

Betty Ann Wilson (Ph.D., Purdue, 1953) is Supervisor of Speech and Hearing Therapy, Lafayette, Indiana, City Schools. This article is based on a portion of a doctoral dissertation completed under the direction of Professor M. D. Steer.

importance of the relationship between speech and reading development, the speech material for the primary school child does not seem to utilize adequately the similarities which exist in teaching reading readiness, reading, and speech improvement. Gibbons (*5*) has stated, 'The comparison of both [speech and reading cases] brings out many similarities in remedial problems and the need for a combined treatment program.' It was impossible, however, to find adequate speech improvement material at the kindergarten level which provided material systematically arranged for a series of lessons and which also adequately incorporated the techniques and principles emphasized in the reading readiness program.

Problem

The purpose of this experiment was to gather evidence which would support or refute the following three major hypotheses:

1. A speech improvement program at the kindergarten level results in a greater decrease in the number of articulation errors on sounds included in the program than is evidenced when no speech improvement lessons are provided.

2. A speech improvement program at the kindergarten level results in a greater decrease in the number of articulation errors on sounds not included in the program than is evidenced when no speech improvement lessons are provided.

3. A speech improvement program at the kindergarten level results in better reading readiness scores than occur when no such program exists.

Subjects

The subjects in this study were all kindergarten children in the Lafayette, Indiana, City Schools. There were five schools participating in the study, and in each school the same teacher taught both morning and afternoon sessions of kindergarten. Thus, 10 kindergarten sections participated in the experiment. By random selection within each school, five of the sections were assigned to the experimental group and five of the sections were assigned to the control group. There were 114 subjects (males–61, females–53) in the control group and 128 subjects (males–61, females–67) in the experimental group.

The subjects were drawn from several localities, representing diverse socio-economic areas. The parents of the subjects were engaged in many occupations. At the beginning of the study, the subjects in the control group had a mean age of 65.75 months, a mean intelligence quotient[1] of 98.5, and a mean social maturity quotient[2] of 101.6. The subjects in the experimental group had a mean age of 65.71 months, a mean intelligence quotient of 99.2, and a mean social maturity quotient of 102.1.

The five teachers participating in this study were regular kindergarten teachers who had no specialized training in corrective speech. Nine students from the Purdue University Speech Correction Department assisted in the articulation testing program.

Equipment, Tests, and Instructional Materials

The instruments used to evaluate the subjects consisted of the Maico Pure-tone F1 audiometer, the Massachusetts Vision Test (*8*), the Goodenough Draw A Man Test, the Vine-

[1]Measured by the Goodenough Draw A Man Test (*6*).

[2]Measured by the Vineland Social Maturity Scale (*3*).

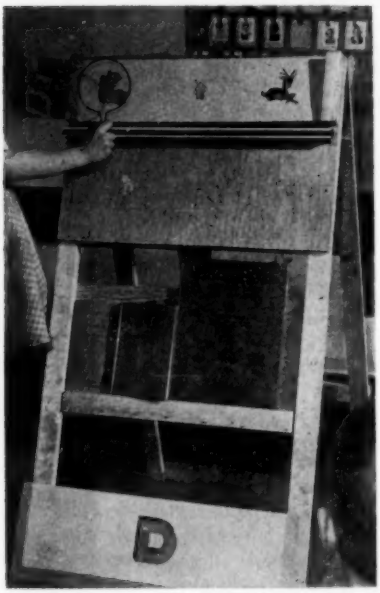

FIGURE 1. Easel board, full view.

land Social Maturity Scale, the Metropolitan Readiness Test (7), and a picture scrapbook articulation test devised by the examiner.

The materials used for speech improvement lessons consisted of stimulation material, picture cards, an easel board, and object boxes. Some of the stories used as stimulation material were written by the examiner, some were adaptations of stories found in *The Correction of Defective Consonant Sounds* (*9*), and some were found in children's literature. One exercise-poem and an echo game were also utilized.

The picture cards used in conjunction with the easel board were of light green cardboard. Pictures representing the various sounds were cut from magazines, catalogues, and children's books and mounted on these cards. There was a series of three sets of pictures for each sound studied. The first set illustrated the use of the sound in the initial position in words, the second in the final position, and the third in the medial position.

The easel board was a wooden structure 40 inches high and 22 inches wide. A mounting board was attached to the front of the easel. A metal slide, two card holders, and a marker were affixed to the mounting board. (See Figures 1 and 2.)

Twelve boxes of objects were used in this experiment. Each box contained from eight to twenty objects. The names of these objects included the sound being studied in all positions.

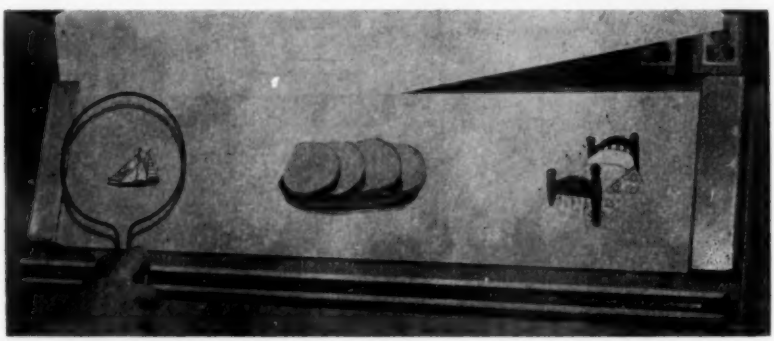

FIGURE 2. Easel board, close-up view.

Since it was necessary to use objects which would be identified by kindergarten children, many of the articles were inexpensive toys.

Procedure

The procedure followed in this study consisted of the pre-experimental testing, the presentation of the speech improvement lessons, and the post-experimental testing.

During the initial testing period, each subject was given a series of five tests. The Goodenough Draw A Man Test was administered in group form, in the regular kindergarten rooms. A Vineland Social Maturity Scale was recorded for each subject with his teacher acting as the informant. The individual puretone audiometric test was administered to each subject. The subjects were tested at 500, 1000, 2000, and 4000 cps, and no child was included in the study unless he heard each frequency at the 15 db level on the audiometer. School nurses administered the Massachusetts Vision Test. Only children with a visual acuity of at least 20/40 were included in the study. An articulation test was administered to each subject and the results were indicated by two examiners.

The material used in the speech improvement lessons was designed to cover a period of 12 weeks. One week was devoted to each of the consonant sounds studied and five daily lessons were presented by the kindergarten teachers each week. Each lesson could be presented in a 10 to 20 minute period. Only single consonant sounds were studied. Those sounds represented by two letters were not included in the study. Sounds which did not appear in all positions in words or which could not be represented pictorially were also excluded from the lessons. The sounds studied and their order of presentation were: **[p b m n t d k g f l r s].**

The same lesson plan pattern was followed each week. On the first day the sound stimulation lesson was presented. The purpose was to afford the students an opportunity to hear the sound being studied as it appeared in all positions in words.

The second lesson of each week was devoted to the study of the sound as it appears in the initial position in words. The picture cards were used to evoke the desired response. These cards were placed in the metal card holders on the easel board. The teacher would encircle the first picture with the wire marker, and the children, as a group, identified the picture. After all the pictures on the card had been identified, the teacher would employ any one of several devices which would give the children a chance to say the words. When an individual child identified a picture, he would encircle it with the marker. Each time the marker had been used, the teacher would return it to the left side of the board. Thus, when a child moved the marker, he was getting pre-reading experience by following across the picture card from left to right with the marker.

The lessons for the next two days followed a similar plan with the sound in the final and medial positions, respectively. The last lesson of each week was designed to provide opportunities for the children to utilize, in sentences, the sound which had been studied. The box of objects illustrating the sound was used for this lesson. The class, as a group, would identify each object, saying, 'It's a——.' Then any one of several devices would be used which enabled the children to use the sound being studied.

The same daily procedure was followed for each of the sounds studied. At the conclusion of the 12 weeks of speech improvement lessons, there was a post-experimental testing period. During this period, each subject received a second articulation test and a reading readiness test.

Results and Discussion

In order to test the reliability of the articulation test results used in this experiment, correlation coefficients between the errors marked by the experimenter and the errors marked by the second examiners were determined. The magnitude of these coefficients indicates that a high degree of agreement existed between the experimenter and the variable second examiner in marking errors on the articulation tests. In all computations involving the number of articulation errors made by subjects participating in the study, however, the mean number of errors marked by two examiners was utilized.

The experimental design used in this investigation is a five-by-two double classification: five schools with two classes, an experimental and a control class, in each school. Since both classes within each school were handled by the same teacher, teacher differences were completely confounded with school differences, and the design provides control of both of these effects by removing school differences from the error term.

The function of the statistical analysis was to compare, at the end of the experimental period, the number of errors made by the experimental subjects with the number of errors made by the control subjects on each of eight articulation variables and to compare the reading readiness test scores obtained by each group. The articulation variables were the errors in sound production detected in three positions (initial, final, and medial) within words and the total of such errors. Included in the analysis were the 12 sounds presented in the speech

TABLE 1. Mean number of articulation errors for the 12 sounds included in the training syllabus.

	Means before adjustment		*Means after adjustment*		*Differences between adjusted means*
	Experimental group	*Control group*	*Experimental group*	*Control group*	
Initial Position					
1st test	1.18	1.22			
2nd test	0.69	1.19	0.71	1.18	0.47
Final Position					
1st test	3.35	2.66			
2nd test	1.40	3.37	1.26	3.51	2.25
Medial Position					
1st test	1.65	1.38			
2nd test	0.72	1.29	0.66	1.35	0.69
All Positions					
1st test	6.18	5.25			
2nd test	2.79	5.89	2.50	6.18	3.68

TABLE 2. Analyses of covariance for the 12 sounds included in the training syllabus: experimental versus control.

Sound Position	*Source*	*Adjusted Sums of Squares*	*df*	*Mean Squares (Adjusted Scores)*	*F-ratio*	*Probability*
Initial	Between Groups	13.3843	1	13.3843	11.3445	.001 >P
	Within cells + Interaction	272.5302	231	1.1798		
		285.9145	232			
Final	Between Groups	290.7321	1	290.7321	79.9110	.001 >P
	Within cells*	825.8617	227	3.6382		
		1116.5938	228			
Medial	Between Groups	28.8202	1	28.8202	21.3812	.001 >P
	Within cells + Interaction	311.3747	231	1.3479		
		340.1949	232			
Total	Between Groups	860.8841	1	860.8841	92.6559	.001 >P
	Within cells + Interaction	2146.2690	231	9.2912		
		3007.1531	232			

*'Within cells' used as error term in cases where school-method interaction was significant.

improvement syllabus and six sounds not included in these lessons.

In order to free this comparison from any effect due to differences which may have existed between the experimental and control subjects at the onset of the experimentation, certain variables were controlled statistically to remove initial differences by means of analysis of covariance with multiple independent variables (*2*). The variables controlled in this manner were age, sex distribution, social quotient, intelligence quotient, and the pre-training scores on whichever variable was being tested.

Because the sizes of the classes involved in the experiment could not be controlled by the experimenter, the five-by-two double classification design was characterized by disproportionate frequencies. Special methods of analysis appropriate to this situation, the so-called 'non-orthogonal case,' were therefore used (*10*). It was assumed that the unequal class sizes were accidents of sampling, not characteristic of the experimental conditions or of the population sampled, and, therefore the 'restrictions of unweighted means' were used (*10*). In addition, since differing methods of analysis are used depending upon whether or not there is a significant interaction, it was necessary to determine whether or not the school-method interactions were significant before proceeding with the remainder of the analyses. The five per cent level was used as the critical level for this decision. On four of the variables, the school-method interactions were significant, and on five variables they were not. The appropriate technique was used in each situation.

Table 1 presents the mean number

TABLE 3. Mean number of articulation errors for six sounds not included in the training syllabus.

	Means before adjustment		*Means after adjustment*		*Differences between adjusted means*
	Experimental group	*Control group*	*Experimental group*	*Control group*	
Initial Position					
1st test	2.32	2.78			
2nd test	1.55	2.29	1.71	2.13	0.42
Final Position					
1st test	2.47	2.54			
2nd test	1.40	1.96	1.42	1.94	0.52
Medial Position					
1st test	2.52	2.79			
2nd test	1.65	2.23	1.75	2.14	0.39
All Positions					
1st test	7.26	8.12			
2nd test	4.61	6.49	4.91	6.18	1.27

of articulation errors made by the experimental group and by the control group on the 12 sounds included in the speech improvement syllabus. The results of both the pre-training and post-training articulation tests are indicated. In addition, the adjusted means (adjusted by multiple covariance) for the second test are presented as are the differences between adjusted means.

Table 2 presents the differences be-

TABLE 4. Analyses of covariance for six sounds not included in the training syllabus: experimental versus control.

Sound Position	*Source*	*Adjusted Sums of Squares*	*df*	*Mean Squares (Adjusted Scores)*	*F-ratio*	*Probability*
Initial	Between Groups	10.7425	1	10.7425	4.5904	.05 > P > .025
	Within cells + Interaction	540.5968	231	2.3402		
		551.3393	232			
Final	Between Groups	15.5772	1	15.5772	6.8978	.01 > P > .005
	Within cells*	512.6347	227	2.2583		
		528.2119	228			
Medial	Between Groups	9.0426	1	9.0426	4.2064	.05 > P > .025
	Within cells*	488.0035	227	2.1498		
		497.0461	228			
Total	Between Groups	93.8754	1	93.8754	7.8759	.01 > P > .005
	Within cells*	2705.6920	227	11.9193		
		2799.6574	228			

*"Within cells" used as error term in cases where school-method interaction was significant.

TABLE 5. Mean percentile score on reading readiness test for experimental and control groups.

	Experimental group	*Control group*	*Difference between adjusted means*
Means before adjustment	42.07	41.10	
Means after adjustment	41.83	41.34	0.49

tween the adjusted means and the *F*-ratios for these differences. The degree of confidence with which the differences between the experimental and control group can be stated provides strong support for the first hypothesis of this research, that children who receive speech improvement lessons will commit fewer articulation errors on the sounds included in the training syllabus than children who do not receive such lessons.

Table 3 presents the mean number of articulation errors made by the experimental and control groups on six sounds not included in the speech improvement syllabus. When the five per cent level was used as the critical level, the significance levels of the differences between the experimental and control groups with respect to these six sounds were all within the critical region, as shown on Table 4. Thus, the second hypothesis, that children who receive speech improvement lessons will commit fewer articulation errors on certain sounds not included in the training syllabus than children who do not receive such lessons, is adequately supported.

Table 5 indicates the mean percentile ratings achieved by the experimental and control groups on the reading readiness test. The *F*-ratio (see Table 6) indicates that there were no significant differences between the groups with respect to reading readiness. The third hypothesis, that the group receiving speech improvement lessons will achieve higher reading readiness scores than the group not receiving the lessons, is, therefore, not supported by these results.

The experimenter is of the opinion that these results indicate the need for further research. Further investigation is needed which would, in effect, demonstrate whether the sample employed in this experiment is truly representative of the total population of American kindergarten children. Since the post articulation test was administered shortly after the training period, one cannot be certain that all children who showed improvement in

TABLE 6. Analysis of covariance on reading readiness scores.

Source	*Adjusted Sums of Squares*	*df*	*Mean-Squares (Adjusted Scores)*	*F-ratio*	*Probability*
Between Groups	14.8802	1	14.8802	0.0313	$0.9 > P > 0.8$
Within cells+ Interaction	110217.7271	232	475.0764		

their articulation would maintain this achievement over a long period of time. Further study might indicate how long one might expect such achievement to persist.

Further study is needed to ascertain whether the sounds not tested would demonstrate the same effects as were evidenced on the six sounds which were tested but not included in the training syllabus.

The results do not support the third hypothesis, that a speech improvement program, at the kindergarten level, results in better reading readiness scores than occur when no such program exists. It is possible, however, that certain pre-reading skills may have been improved by children receiving speech improvement lessons. If such is the case, a more valid test of these pre-reading skills needs to be employed in order to measure the extent of such improvement.

In order to check the possibility that sex differences in articulation ability might have contributed to the results in some manner, the experimenter conducted an additional analysis of variance, in which sex and the total number of errors on the initial articulation testing were the additional variables considered. The results of this analysis are presented in Table 7.

If sex had been an important factor contributing to the results previously cited, the *F*-ratios for sexes within groups and for test-retest by sex within groups should have been significant. Since neither of these *F*-ratios reached the critical point, it may be assumed that sex differences have not contributed materially to the results reported.

Summary and Conclusions

A 12-week speech improvement program for kindergarten children was devised. The effect of such a program was evaluated in an experimental situation utilizing 114 control subjects and 128 experimental subjects. The results of this experiment lead to certain conclusions which are applicable to Lafayette public school kindergarten children. The variables of age, sex

TABLE 7. Analysis of variance, of total number of errors made on 12 sounds included in training syllabus, to evaluate sex differences.

Source	*df*	*Sum of squares*	*Mean squares*	*F-ratio*	*Probability*
Groups (Experimental versus Control)	1	5.1627	5.1627	6.94	.01 > P
Sex within groups	2	2.5098	1.2549	1.69	.05 < P
Subjects within sex within groups	238	176.9554	0.7435		
Test-Retest	1	8.0449	8.0449	65.98	.001 > P
T-R by groups	1	13.0528	13.0528	105.44	.001 > P
T-R by sex within groups	2	0.1092	0.0546	1.	.05 < P
T-R by subjects within sex within groups	238	29.4773	0.1238		
Total	483	235.3121			

distribution, intelligence quotient, social quotient, and the number of articulation errors made on initial testing limit the applications which may be made from this experiment. Furthermore, these conclusions apply only when the described material and procedure for conducting lessons are utilized. Within the limitations, then, of this experiment, the following conclusions are drawn:

1. The reduction in the mean number of articulation errors made on sounds included in the speech improvement lessons is related to these lessons.

2. The reduction in the mean number of articulation errors made on certain sounds not included in the speech improvement lessons is related to these lessons.

3. Reading readiness scores as measured by the Metropolitan Readiness Test are not related to these speech improvement lessons.

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A Study Of The Effectiveness Of Recorded Articulation Exercises

Anthony Holbrook

THE SPEECH of many of the students attending the University of Hawaii contains a number of sound substitutions of dialectal origin. The oriental languages, Japanese in particular, have greatly influenced the English spoken throughout the Hawaiian Islands. Considerable time and effort are spent at the University to eliminate those dialectal characteristics which may interfere with effective oral communication. Efficient audio-visual aids, therefore, are needed to help eliminate the sound substitutions which are most frequently heard. This is a study of the effectiveness of recorded articulation exercises in eliminating certain dialectal sound substitutions in Hawaii.

Procedure

The 42 subjects used in the study were enrolled in the Fundamentals of Speech course of the University. Twenty-one subjects were placed in the experimental group, and 21 in the control group. The groups were approximately matched as to number of sound substitutions, language background, sex, speech courses in progress, and previous speech courses.

All subjects tape recorded a sentence-type articulation test (*1*). The author tabulated the number of different sound substitutions for each subject in order to have a basis for dividing the subjects into the experimental and control groups.

The experimental group received special speech training by means of recorded articulation exercises, but the control group was not trained. The recorded exercises pronounced the sound to be practiced in nonsense syllables which were followed by word lists and sentences (*1*). Exercises for 11 of the most common sound substitutions of the dialect were developed (*1, 2*).

During a training period of eight weeks, the experimental group listened to the recorded articulation exercises for two half-hour periods per week. The exercises were mimeographed for visual stimulation, and the same sounds, words, and sentences were tape recorded to provide the auditory stimulation. Time was left on the recording for the subjects to repeat the words and sentences. Therefore, every sound, word, and sentence of each exercise was seen, heard, and repeated by the subjects. The nine exercises used in this study were listened to at least three times by all subjects of the experimental group. The author was present during all training periods. Occasionally he would stop the recorder to ask the subjects to repeat individually the last word or sentence heard. In this fashion subjects who had not been imitating

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the pronunciation on the record satisfactorily could have this called to their attention. Relatively more help was given by the author at the beginning of the training period than during the later meetings. Individual help by the author was seldom given more than five or six times during any given lesson.

Upon the completion of the training period, the subjects of both the experimental and control groups again tape recorded the articulation test sentences which they had recorded prior to the training period.

The pre-training and post-training articulation test recordings were evaluated individually by three qualified judges who indicated by means of phonetic symbols the different sound substitutions heard for each subject. By means of a code number on each recording, the identity of the subject, whether experimental or control, was unknown to the judges. Also the judges did not know whether they were evaluating a pre-training or post-training test, because the recordings were played in a random fashion. In the final tabulation, no sound substitution was counted unless all three judges had indicated the substitution with the same phonetic symbol on their score form.

Results

There was no significant difference between the groups prior to the training period. The mean number of sound substitutions for the experimental group was 6.76; the mean for the control group was 6.38. The standard deviation for the experimental group was 2.33, and the standard deviation was 1.89 for the control group.

Since the groups were approximately matched, no significant difference between the groups should have existed prior to the training period. To test this similarity of groups, a *t*-test was made comparing the pre-training tests of the two groups. The obtained *t* was .57. This was clearly not significant at the five per cent level of confidence. Therefore, the scores made by the experimental and control groups on the pre-training articulation test were not significantly different.

The post-training scores of the two groups were compared in the same fashion as the pre-training scores. The mean number of sound substitutions for the experimental group was 3.52; for the control group the mean number of sound substitutions was 5.14. The standard deviation was 2.44 for the experimental group; however, the standard deviation was 2.10 for the control group. The obtained *t* was 2.25. This *t* is significant between the five and one per cent levels of confidence. Therefore, the scores for the two groups were significantly different following the training period.

The above evaluation, however, does not indicate precisely how much the experimental group improved when its pre-training scores were compared with its post-training scores. The mean number of sound substitutions for the experimental group on the pre-training test was 6.76 with a standard deviation of 2.33; the mean number of sound substitutions for the experimental group on the post-training test was 3.52 with a standard deviation of 2.44. Here the obtained *t* was 4.26. This is significant at the one per cent level of confidence, which indicates that the training did favorably influence the experimental group subjects by reducing the number of sound substitutions.

The control group also reduced its number of sound substitutions during

the training period; however, this reduction was not statistically significant. The mean number of sound substitutions for the control group on the pre-training test was 6.38 with a standard deviation of 1.89. The mean number of sound substitutions for the control group on the post-training test was 5.14 with a standard deviation of 2.10. The obtained *t* was 1.97. This is not significant at the five per cent level of confidence.

The preceding evaluation indicates that the procedures outlined in this study were effective in reducing dialectal sound substitutions among the subjects of the experimental group of this study.

Conclusion

Recorded articulation exercises designed to eliminate specific dialectal sound substitutions are effective. They may aid the instructor in the classroom as well as help students at home after they have had some training with the records. The subjects used in this study were of oriental descent; however, recorded articulation exercises for subjects of other language backgrounds should be equally effective.

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A Summer Residential Program In Hearing Education

J. C. Kelly

THE PART played by the Division of Services for Crippled Children, University of Illinois, in the speech and hearing education of the handicapped children of the state has been mentioned by Shover (*4*). As a part of the continuing service forecast in that article, several summer residential centers for speech and hearing handicapped children have been maintained each year by the Division. One of these centers has been held for nine years at the University of Illinois at Urbana. The plan of education has been continually modified to suit the needs of the children attending the center. It will be the purpose of the following discussion to describe the hearing education section of the program and evaluate the procedures.

Description of Program

Forty children were in attendance during the summer of 1953. Twenty-two of these were hard of hearing. Of the remainder, 13 were in the cleft palate group and five in the cerebral palsied group. All were in the age range of 10 to 17 years and almost equally divided in sex. Classes were held five days per week, from 8 a.m. to 3:30 p.m. The daily program followed for the six week period was as follows:

8:00-8:40 Speech and Hearing Classes
- 3 lipreading classes of 3 or 4 students each.
- 2 auditory training classes of 6 persons each.
- 6 individual lessons for cleft palate children.
- 1 class for cleft palate children.
- 3 individual lessons for cerebral palsied children.
- 1 class for cerebral palsied children.

8:45-10:00 Theatre Therapy
- All 40 children worked in a single large or five small groups.
- Split period permitted one-half time for arts and crafts.
- One-half time for cerebral palsied children in corrective gym.

10:05-10:45 Speech and Hearing Classes (Same as 8:00-8:40)

11:00-11:55 Swimming
- All children were included who were given medical clearance to swim. Those not cleared for swimming were assigned to arts and crafts.

1:30-2:10 Speech and Hearing Classes
- 1 large class, life situation moving pictures (lipreading).
- 1 small class, talker-listener drill.
- 6 classes in cleft palate therapy.
- 3 classes in cerebral palsy therapy.

2:15-3:30 Music Therapy
- 1 group, older children with some musical experience.
- 1 group, older children with no musical experience.
- 1 group, younger children with some musical experience.
- 1 group, younger children with no musical experience.
- One-fourth of children given half period of remedial education following discovery of deficiency.

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The staff for the program included 17 instructors, employed one-half time. Their work was directed by three supervisors, one for each of the three branches of speech and hearing work; a director of music therapy; a director of theatre therapy; a director of arts and crafts; and a coordinator for the entire program. This is exclusive of the staff which took charge of the children after school hours. In addition to the regular program, educational diagnostic testing and training was done by the Institute of Research on Exceptional Children; psychometric examinations were conducted by the staff of the Psychological Clinic; and communications testing and hearing aid evaluation done in the Speech Research Laboratory. Although all of the children participated in many of the activities listed, they will be described only in terms of the 22 children who were hard of hearing.

Theatre Therapy. Added for the first time this summer was a scheduled activity which was called theatre therapy. The short play or skit provided a 'structured conversation' for communication practice. The hard of hearing child was compelled to follow lines to know when to come in on cue. The familiarity of fixed lines aided in the practice for listening improvement. Work on fixed lines also afforded an opportunity to work on speech. All children were assigned speaking parts in plays and these plays were rehearsed daily. The goal of the practices was a demonstration-show presented to parents and staff during the final two days of the session.

During the first few days of the center, the children were seen as a single large group. Emphasis was put on creative dramatics. After three days the children were assigned to four working sections. The first two weeks were spent in reducing the fear of a speech situation, developing an interest in speaking around situations, and developing bodily action, all before working on set conversational patterns provided by the plays themselves. During the four remaining weeks, one small group worked full time on a single one-act play. The remaining four groups spent one-half time in play rehearsals and the remaining time in arts and crafts.

The demonstration-show at the end of the session brought the whole program into action. Two of the plays selected involved music, so that the children could work in combination with the music section to sing, play instruments, and speak. Costumes and properties for the shows were made in arts and crafts classes. Two of the plays were written by the children themselves, two were written by staff members, and the fifth was a regular one-act play. Care was taken to select dialogue that was simple and involved short lines. No attempt was made to present the show as an artistic production; the goal was communication practice with a considerable motivation.

Music Therapy. Music therapy also was introduced for the first time in the summer of 1953. There was little precedent to follow in the planning of such an activity for speech and hearing handicapped children. Several characteristics of music seemed to warrant its trial. First, music has an appeal to most individuals in some manner or other; it may be classed as fun. Second, an awareness and appreciation of the differences in musical sounds might be associated with attention to and discrimination of the sounds of speech. Third, there seems to be particular merit in group singing as a speech and hearing therapy. The

phonation in singing is sustained and thus may be considered a breathing control practice. The diction of singing is prolonged, a factor also associated with good speech. Retention of melodic patterns involves auditory memory.

With this idea to work on, a program of music for the handicapped child was designed. Three basic types of music were included: informal instruments, group singing, and music appreciation. The work with informal instruments was interesting. Each of the 40 children had a harmonica; they were used in solo and ensemble playing. Tonettes and autoharps were also used. Of particular interest were the jugs and bottles used in group playing. Rhythm ensembles were organized, using instruments made in arts and crafts classes out of tin cans and rubber inner tubes. Some instruction on ukulele was included. In music appreciation periods sound films and recordings were used, suitable to the age and experience of the sections. A special study of cowboy and popular tunes was made and on several occasions guest musicians performed for the children. Group singing was done every day. All forms of music work were included in the final demonstration-show.

For purposes of organization the 40 children were divided into four smaller groups. The older children were included in two groups: those with some musical experience and those with no musical experience. The younger children were divided into two similar groups. All handling of the smaller sections was done by speech and hearing clinicians under the direction of the music supervisor.

The 'Little' Language. Basic to all of the group training exercises described in the following paragraphs is the idea of the 'little' language compared with the 'big' language. Big language is the everyday use of connected speech in conversational situations with all of the aspects of situational and contextual meaning. Big language is cumbersome, difficult to measure and define, and awkward to use in training situations. Big language involves the somewhat irrelevant factors of experience and intelligence, which the hard of hearing possess in varying degrees. Little language is simple communication made up of numbers, alphabet letters, and easy words in series but out of context. These simple language parts are presented in series of one, two, and three units for discrimination and recognition. In presenting a chain of speech units, the receiver must make multiple discriminations, yet no unit may be recognized from context. It is a method of building communications efficiency from a key word basis.

Practice in communication and the discrimination on which it is based, whether the communication exercise stresses hearing, lipreading, or speech, involves a talker and a listener. The little language is the message spoken in this talker-listener drill, its content emphasizing the particular discriminations necessary for the communication skill being taught.

Little language as a training device can be used with the understanding that big language performance can be predicted from it with reasonable success. Studies of speech intelligibility at Bell Telephone Laboratories, the Harvard Psycho-Acoustic Laboratory, and the Waco Voice Communication Laboratory all point out the relationship between word intelligibility and sentence intelligibility (connected speech). These agencies have developed speech intelligibility tests that

allow accurate estimates of ability to talk and listen to be derived from a presentation of messages (words out of context) varying from 12 to 50 words in length. It has also been determined that taking such a communication test as suggested above is one of the surest methods of improving the ability to talk and listen. Hence, the methods of instruction that follow have employed a talker and a listener in a test-taking situation, providing motivation as well as a means of forcing attention to communication and a means of checking performance in drill situations.

Speech-Hearing Training. Hearing discrimination for speech sounds was one important goal in this hearing education. One 40-minute period daily was devoted to such training, the procedure being that outlined in an exercise booklet used by each student (*2*). The plan of group auditory training was operated with six children supervised by one instructor. The group of six was subdivided into three teams of two persons each. Within the smaller team arrangement was a talker and a listener who could function independent of the remainder of the group. The three teams operated simultaneously in 'Chinese school' fashion, creating their own background noise. One listener was required to listen to his own team talker while ignoring the other two talkers in the same room speaking at the same time. This procedure was followed while the listeners wore hearing aids, either their own or aids provided for them. During half of the period the student was a talker and during the remainder he was a listener.

The first lesson for the talker-listener teams was the communication of numbers from one to nine. These numbers, starting with a series of two and increasing to a series of four, involved vowel discrimination primarily and were the easiest communication possible for the hard of hearing children. Each item in the drill was preceded by the carrier phrase, 'Number one is . . . . ,' so that the whole message was read like a sentence. Only the numbers were written down by the listener, who was required to record answers so that accuracy could be checked. The numbers were read as telephone numbers, one at a time. This exercise served to acquaint the students with drill to follow, for all exercises were based on the same general plan, only the message being changed.

The second stage of training was the communication of consonants through alphabet letters in series. Nineteen alphabet letters were used for this purpose, those excluded being I, O, Q, R, U, Y, and W. The 19 alphabet letters have only three vowels so that consonant discrimination is necessary for identification. For instance, the vowel [i] is paired with a consonant to form nine different letters: B, C, D, E, G, P, T, V, and Z. To distinguish B from D, the listener must hear the consonant rather than the vowel.

The third communication exercise involved simple words in series. A sample message is, 'Number one is *house tree.*' The number of words in each series was increased from two to four in a progression of exercises. The final stage of training was the communication of connected speech. Instead of writing down the whole message, the listener was asked to take notes on the whole message and the notes were scored.

Lipreading Training. Each child in the hearing program was given two periods of lipreading instruction each

day. The first period was 40 minutes in length and the groups taught numbered from three to four children. Each child was given a second period of instruction four days out of every five, the second period using life situation movies (*3*). The initial lipreading lessons again involved the little language. Communication practice first considered the letters E, U, O, and A, representing front and back vowels. Identification was done progressively in series of one, two, and three letters. Since more than half of the 22 children had received no previous lipreading instruction, the practice of easy identification of letters in series involved centering the receiver's attention on the face of the speaker. Little attention was given to a study of movement as such because recognition rather than description was the goal. Letters selected for communication progressed from vowel to consonant groups. Only the vowels and the highly visible consonants were studied. From a base of alphabet letter discrimination, instruction also involved word identification from the same cues used to recognize the alphabet letters.

Also featured in the lipreading instruction was the 'hand movie,' a specially prepared sequence of sentences on 8 mm movie film projected by means of a personal hand-held moving picture viewer. Two 25-foot strips of film were prepared. Each consisted of a group of short, common sentences illustrating the sounds studied. Each sentence was introduced by a title so that the lipreader would know the message to follow. Each sentence was spoken by two persons so that the speech of different persons could be observed. The procedure in instruction was the 'see and say' practice. The children watched the movies and spoke what they saw. The film provided the movement and the child provided the speech. Each student had his own viewer and could use it at his own pace. The viewer could be hand cranked at any speed, normal or slow motion, or a frame by frame analysis could be made. It could also be easily reversed for re-examination of any sound or sound group.

The hand movie has many advantages in lipreading instruction not possible with the motor driven projector. The latter is bulky and difficult to set up for clinical work whereas the small viewer requires no light source, no setting-up problems, and no storage problems. It is difficult to find the proper spot on the film in rewinding when the motor driven projector is used; this is much less difficult with the hand viewer. It was felt that these advantages, along with the saving of the cost of expensive motor driven equipment, provided a very practical approach to the study of movement through motion pictures.

Lipreading was not taught as a communication in silence. Inaudible voice was used only for motivation. Instructors used an audible voice during half of the instructional time on the assumption that visual discrimination was to complement rather than substitute for auditory discrimination.

Evaluation of the Program

Speech-Hearing Test. The evaluation of the instruction given during the summer session was based on pre-training and post-training tests of three aspects of the work: speech-hearing, lipreading, and speech. The speech-hearing test used to check sound discrimination at a fixed intensity level was the Alphabet Syllable Lists. These lists (*2*) had been used during the two previous summers to

check progress in hearing discrimination. They are composed of the 19 alphabet letters remaining when I, O, Q, R, U, W, and Y are omitted. Each list contains 25 lines of three alphabet letters each, making up coined words for test purposes that are representative of the frequency of consonant sounds in connected speech. A sample test line preceded by a carrier phrase was, 'Number one is BCS.' If the response to this line is 'DCF,' two errors have been made. The total of 75 units may be administered in about two minutes. The listening score obtained is the number of letters reported correctly divided by 75. Because the same 75 letters might be used in many combinations, it was possible to construct many lists having exactly the same speech content. It was determined that the position in the trio of sounds had no relationship to intelligibility.

The speech-hearing tests were given in sound proof rooms and transmitted to the listener in free field through a high fidelity sound system capable of control by 10 db and unit attenuators. The referent zero for all gain measurement was the threshold of detection of speech sound determined by checking normal adult ears. During the first two years, two speech hearing measurements were obtained: the unaided word intelligibility level for recorded words before and after training and the unaided speech intelligibility score of alphabet letters presented at conversational signal intensity (50 db more intense than referent listed above). All hearing measures were obtained in unaided performance for lack of a master hearing aid, but during the third year both aided and unaided speech intelligibility scores are reported. The common aid used for all students in the 1953 tests was the Ambco Hearing Amplifier with a single headphone used on the better ear. Normal hearing adult subjects tested on this equipment produced a mean word intelligibility level of 7 db and a mean speech intelligibility score of 96%. Thus for the 16 children reported in Table 2 it is possible to say that the approximate loss of hearing for speech is about 33 db by threshold measurement and about 40% for speech sound discrimination. All children included in all three tables were able to hear to some extent without a hearing aid except those in Table 1, seven of whom had unaided discrimination scores of 0%. All of the latter, however, were able to score with a hearing aid.

Preliminary checking on reliability and validity of the alphabet syllable test demonstrated its usefulness in such a situation as this. Thirty-six children with speech and hearing handicaps, including 16 with normal hearing, heard two different lists in one sitting. The test-retest correlation for these children with and without hearing loss was .98. When the alphabet test was given to 40 hearing handicapped adults and followed by the Waco

TABLE 1. Pre-training and post-training scores in speech-hearing, 1953 (N=20).

	Initial Mean	*S.D.*	*Final Mean*	*S.D.*	*t*
Unaided	33.80%	31.15	50.95%	31.30	3.20*
Aided	57.75%	19.81	75.10%	12.94	3.56*

* Significant at the 1% level.

TABLE 2. Pre-training and post-training scores in speech-hearing, 1952 (N=16).

	Initial Mean	*S.D.*	*Final Mean*	*S.D.*	*t*
Unaided Speech-Hearing	55.56%	26.03	72.93%	11.93	3.60*
Word Intelligibility Level Unaided	39.86 db	12.00	38.19 db	10.52	

* Significant at the 1% level.

24-Word Test the correlation between the two was .94. When 22 normal hearing adult college students were given the alphabet and Waco tests as classroom communication tests (live voice at a distance of 15 feet, in quiet) the correlation obtained was .80.

Table 1 includes the unaided and aided pre- and post-test scores on the alphabet syllable test. These scores, obtained for the 1953 program described in this article, demonstrate that training enabled the children to hear about as well after training as they had done with their hearing aids before training. The post-training mean is about 51% compared to a pre-training aided score of 58%. The aided listening scores improved from 51 to 75%, however, this gain being significant at the 1% level of confidence. Unaided listening improvement, from 34 to 51%, is also significant at the 1% level of confidence.

Table 2 provides no aided measurements but does include the results of training upon the word intelligibility threshold level as well as the speech intelligibility scores. It may be noted that the threshold measure, pre- and post-training, demonstrates no gain. On the other hand the speech intelligibility gain, unaided, is significant at the 1% level.

Table 3, presenting the same type of data as Table 2, indicates that the change in threshold measurement following training was not significant whereas the gain in unaided listening is significant at the 1% level. It may be concluded that the type of hearing education program described in this article and carried out for three consecutive summers with Division children, ages 10-17 years, produces listening gains of the order indicated above as measured both aided and unaided by the alphabet syllable speech intelligibility test. It must also

TABLE 3. Pre-training and post-training scores in speech-hearing, 1951 (N=15).

	Initial Mean	*S.D.*	*Final Mean*	*S.D.*	*t*
Unaided Speech-Hearing	45.79%	18.94	66.43%	15.61	3.03*
Word Intelligibility Level Unaided	46.16 db	15.56	39.92 db	13.31	1.67

* Significant at the 1% level.

be noted that there is no evidence that the threshold measurement for speech hearing was significantly changed through training.

The Lipreading Test. A test of lipreading suitable for children in this age range and capable of administration in 40 minutes is not easily found. The following test of lipreading skill was devised for this group of children and photographed on 16 mm film. It consisted of three sections: two employing the little language, alphabet letters and words out of context, and the third employing short sentences. The first section, presented by a girl, age 15, had this content:

Number one is	A	O	E
Number two is	Y	B	U
Number three is	I	G	M
Number four is	U	R	V
Number five is	R	E	H
Number six is	B	I	U
Number seven is	J	F	C
Number eight is	H	Y	M
Number nine is	I	O	J
Number ten is	A	G	N
Number eleven is	R	Y	V
Number twelve is	B	O	E
Number thirteen is	A	B	V
Number fourteen is	U	R	E
Number fifteen is	O	L	A

This communication test can be presented quickly and scored quickly, and the letters are easy enough that children of almost any age can score on it. The mean score for 22 hard of hearing children on this section was 33.3 units with a range of 8 to 44 units correct. The standard deviation was 9.01. In the previous year the mean score on the same test on film was 28.05 with 19 children taking the test. The test was repeated for 35 children of this same age range, some having hearing loss and some having no hearing loss. The test-retest correlation between the first and second presentation was .86; split half reliability was .94. The correlation between the scores on this test and the judgment of lipreading skill given by a lipreading teacher who worked with the entire group was .56.

The second section was made up of five lines of three words each. Two of these sections were photographed, one spoken by a male adult speaker and the other by a female adult speaker. The following is the content for section two:

Number one is *whisper surface shoe*
Number two is *window pipe shape*
Number three is *picture fish match*
Number four is *safe name mouse*
Number five is *page no please*

Number one is *shadow pencil face*
Number two is *boy apple touch*
Number three is *mother sidewalk stove*
Number four is *valley station free*
Number five is *jump line music*

This section proved to be the most difficult. The mean score before training was 8.1 correct words out of 30 with a standard deviation of 5.14. Much of this might be attributed to poor selection of test words and rather poor speaker performance. Even so there was a correlation of .66 between scores on the alphabet test and the word test before training and a correlation of .76 after training. The improvement in word recognition in series is noticed by a final mean of 11.3 with a standard deviation of 6.86.

The third section dealt with the recognition of short sentences. These sentences were spoken by a single speaker, male adult:

1. Thank you very much.
2. We saw the show.
3. What is your name?
4. Open the window.
5. How are you this morning?
6. We like baseball.
7. Wash your face.
8. Brush your teeth.
9. I have a new watch.
10. What time is it?
11. How much money do you have?
12. Tell me where you live.

TABLE 4. Pre-training and post-training lipreading scores (N=21).

	Initial Mean	*S.D.*	*Final Mean*	*S.D.*	*t*
Total, 3 parts	62.43	24.22	82.14	24.73	3.86*

* Significant at the 1% level.

As evidence of the relationship between the alphabet test and the sentence test given above, one dealing with letters and the other with connected speech, the correlation between the two before training was .78. After training the two scores were also related as indicated by the correlation of .85. These correlations suggest that alphabet letter and sentence recognition performance are closely related.

Lipreading improvement as indicated by the test on film presented before and after training of 21 children in the summer of 1953 is presented in Table 4. The combined unit scores for all three parts of the film test are indicated by the initial pre-training mean of 62.43 with a possible high score of 124. The post-training mean on the same test was 82.14 units. This gain is significant at the 1% level of confidence.

Speech Improvement. It was considered necessary to have some usable measure of talker improvement for the hard of hearing children. Many of the 22 children in this program did have speech problems associated with the hearing loss. Since the plan of instruction provided no time for individual therapy, it was impossible to work on isolated sounds in the conventional manner. No time was allotted, for instance, on the correction of [s]. All speech training was managed through the talker-listener drill provided for hearing discrimination training. That this should be effective talker drill was not unreasonable, for the talker-listener drill technique has been more widely used for speaker training than for listener training.

It was also the wish of the center to establish some measure of talker efficiency that was independent of personal judgment. Traditionally, the evaluation of speech has been made on an artistic rather than a communication basis with each judge applying his own standard of artistry in speech in assigning his value. Hence, judgments of speech efficiency are not very reliable. To avoid the personal judgment of a clinician in evaluating speech, it was decided to base the evaluation of speech efficiency on a communication standard. This standard implies that if the speaker can be heard accurately by a listener, he is not badly handicapped in speaking. There is considerable evidence to demonstrate that the degree to which communication is not heard will reflect the severity of the defect in talking. For this evaluation a set of 24 talker lists was prepared. One half of the test was composed of 17 lines of three alphabet letters each. Each of the 24 lists had exactly the same letters but the order of presentation of these speech units was changed from one list to the next. Thus, all the lists were phonetically balanced for consonant sounds and since they had identical content it may be assumed that they were equated for difficulty in communication. The second section of the test was composed of eight lines of two words each. These words

were simple words in series but out of context. These words were not chosen for phonetic balance. The basis for selection was the familiarity of the word as well as its relations to other words of similar phonetic structure. A sample line is 'Number one is *pool sum*.' The word *pool* may be confused with *cool*, *tool*, or *fool* (or others) while the word *sum* may be confused with *sun* or *thumb*. It was assumed that the accuracy of the talking would determine the effectiveness of the communication so far as listeners were concerned. Thus, one section of the talker test was balanced phonetically (for consonant sounds) while the other section was not phonetically balanced. To determine the degree to which each section measured talker efficiency, the two sections were scored separately.

On the second day of the summer session each of the 40 children, those with hearing difficulty and those with speech problems but no hearing problem, made a recording of the speech test. Each child was given a rehearsal of the particular test assigned to him before he was allowed to record it. Every possible care was taken to insure a constant over-all intensity in the recording process. The 40 recordings were later played back to a group of six trained listeners who wrote down the words and letters as they heard them spoken. The listener panel was composed of normal hearing adults, graduate students in speech. Talker scores were then determined by the per cent of speech units communicated to the listener panel. During the final week of the session, this procedure was repeated.

Of considerable interest was the high correlation between scores on the phonetically balanced and equated alphabet lists and the word lists which were neither balanced for phonetic structure nor equated for difficulty. The correlation between scores on alphabet and word lists for the 36 children was .73. Dividing the listener panel into two groups of three listeners each, the reliability of the test procedure is indicated by correlations of .86 for the word test and .89 for the alphabet test of communication. The test as a whole substantially agrees with the subjective ratings of talker efficiency given by the clinicians who worked with the children. Each clinician was asked to submit a rating of all of the children on speech ability. A composite rating score was then established for each child from the instructor ratings. The correlation between the recorded communication

TABLE 5. Pre-training and post-training speaker scores (N=36).

	Initial Mean	*S.D.*	*Final Mean*	*S.D.*	*t*
Hearing Group					
Alphabet Test	84.82%	8.35	90.41%	7.71	2.47*
Word Test	45.82%	19.96	65.00%	16.63	3.05†
Cleft Palate Group					
Alphabet Test	78.92%	10.38	82.91%	11.03	1.61
Word Test	44.58%	14.63	56.92%	20.93	2.14*

* Significant at the 5% level.
† Significant at the 1% level.

scores and the instructors' ratings was .78.

Table 5 indicates that the speech efficiency of hearing cases who did not receive individual therapy and did not work on specific sounds improved as much, actually a little more, than those in the cleft palate section where both individual therapy and attention to specific difficulties were given. It would appear that the group therapy that produced significant gains in auditory discrimination did not fail to produce significant gains in speech as well. Although it is possibly true that cleft palate speakers do not make gains so readily as hearing handicapped speakers, there is no evidence to suggest that the talker-listener device is not suited to speech correction work on a group basis. Further study of the value of communication drill for speech improvement is suggested by these results.

Through examination of the results of the communication test of speech ability it was not only possible to note the degree of handicap of each student in speech but also to note the individual improvement made following instruction. This data was helpful in reporting on the success of therapy as it affected each child. The following communication means for each of the three groups indicate the comparative communication loss for the children with the listed handicaps:

Hearing	84.82%
Cleft Palate	78.92%
Cerebral Palsy	64.33%

Considering that the normal speaker should communicate about 95% of the speech items, it is possible to indicate that the handicap in communication imposed on children with hearing impairment was 10%. The cleft palate speakers were about 16% handicapped in speech, and the cerebral palsied speakers were poorest, the handicap being of the order of 30%. These differences were maintained on the word test except that the cerebral palsied children were virtually unintelligible on word communication.

Summary

An all day, every day program in hearing education demands a structure that will sustain the interest of the child as well as provide a satisfactory gain in the skills necessary for improved communication. Assuming that speech and hearing education may not be administered for five consecutive class hours daily without relief, suitable activities that combine the features of both recreation and hearing education must be included. Such a program for a six weeks' residential center is described and evaluated. Group methods in hearing education as described appear to be quite satisfactory in producing measured gains in performance even in the short time they were employed. The combination of theatre and music therapy as complementary activities in the educational program seems promising.

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Audibility-Recognition Sound Pressure Functions Of The Voiced Cognate Consonants

Gilbert C. Tolhurst

IN A PREVIOUS investigation of the audibility and recognition thresholds[1] of voiceless consonants (*9*), the data seemed to indicate few, if any, systematic differences between the two thresholds. There were, however, large differences in the sound-pressure vs. audibility recognition functions for certain of the consonants when comparisons were made between syllabic positions for the same consonant (initially or finally) in relation to the vowel.

The present investigation was concerned with the psychophysical threshold function of the voiced cognate consonants. The experimental design purposely resembled the previous investigation to facilitate direct comparisons.

[1]Audibility threshold is defined in this paper as the sound pressure level at which an individual makes 50 per cent correct responses to the instructions to indicate when he was aware that there was something besides silence preceding or following the constant vowel. Other synonyms could be detectability or perceptability. Recognition threshold is defined as the level at which 50 per cent correct identification of a phoneme is made. Other terms could be sound intelligibility threshold, sound reception threshold or identification threshold.

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Procedure

Eight consonant sounds [g b v d z ð ʒ dʒ] and the single vowel [ʊ] were combined in a random manner into nonsense syllables of the CV, VC, and CVC type. These combinations were recorded and presented binaurally by a high fidelity magnetic tape recorder to 288 subjects who listened via earphones in a soundproofed room. Some groups listened for audibility and others for recognition. The recordings were made by one male voice. This individual was able to keep a relatively constant recording level, so that the standard deviation of the distribution of input levels on all of the syllables was 1.5 db. The syllables were presented at randomized intensities over a maximum range of attenuation of 44 db. The syllables were attenuated as they were recorded. A 16.5 kilocycle tone was also recorded preceding each syllable which upon playback activated a warning signal light alerting the listeners that an aural stimulus was imminent.

The syllables were divided into four series, each consisting of different ar-

rangements of the syllables and necessitating two different types of judgments from the listener:

1. The *I*, or initial, series syllables were arranged so that VC and CVC syllables appeared in random order, the frequency of each type of syllable was 50 per cent at each attenuation level. The response requested of the listeners was to indicate by a symbol on a prepared response form if they did (X) or did not (O) hear *anything preceding* the vowel. Each stimulus syllable followed the flash of the two-second warning signal light.

2. The same methods of presentation were used for series *F*, or final. The syllables, however, were of the CV and CVC type and the response of the listeners was to indicate whether they heard *anything following* the vowel.

3. In series *M*, the observers were required to indicate the presence of a sound when the whole CVC syllable was detected. The syllables were present one-half of the time and totally absent one-half of the time following the warning signal light.

4. The stimulus syllables for *C* series, or recognition series, were all of the CVC type. These were presented at 16 different attenuation levels which were randomly arranged except for the restriction that each of the consonant sounds occurred at each sound level and in each syllable position at least once. The listeners, using a multiple choice form, were to indicate which consonant preceded the vowel and which one followed the vowel in each syllable.

The first three series were designed to provide data from which the audibility function could be obtained. Recognition functions were derived from the data obtained in the last series. Each listener heard two series, usually paired *I* and *F* or *M* and *C*; hence, for each series there were in effect 144 listeners.

Detailed instructions, constant for each group, included an explanation of the listening task, the sounds involved, when to listen attentively and how to respond on the prepared answer forms. Practice sessions were held prior to each 'run' to familiarize the listeners with the tasks. The time of these practice sessions varied in duration, but not widely.

The recordings for each series began with the announcement, 'This is series ——, Line number one.' The warning signal lights would flash on, stay on for two seconds, go off, and a stimulus would be presented (a syllable, or as in the *M* series either a syllable or silence). The time for the stimulus and the listener's response was three seconds. This sequence was repeated for the 10 or 12 stimuli at each attenuation level. Rest periods were given between series.

Equipment

Figure 1 shows a schematic of the recording and playback equipment and their spatial relationships. The recordings were made in 'quiet' in a soundproof room using a condenser microphone (Altec Lansing 21B) and its own matched pre-amplifier. The signal was sent through a limiter (Langevin) set to limit only 2 db and was then recorded by a magnetic tape recorder (Stancil Hoffman R4) at a tape speed of 15 inches per second. The 16.5 kc pure tone (Hewlitt-Packard, Model 205 AG, Audio Oscillator) was keyed onto the tape providing an impulse which activated the warning signal light used to alert the listeners that an auditory stimulus would follow. The syllables, spoken at a 'constant' level, were attenuated

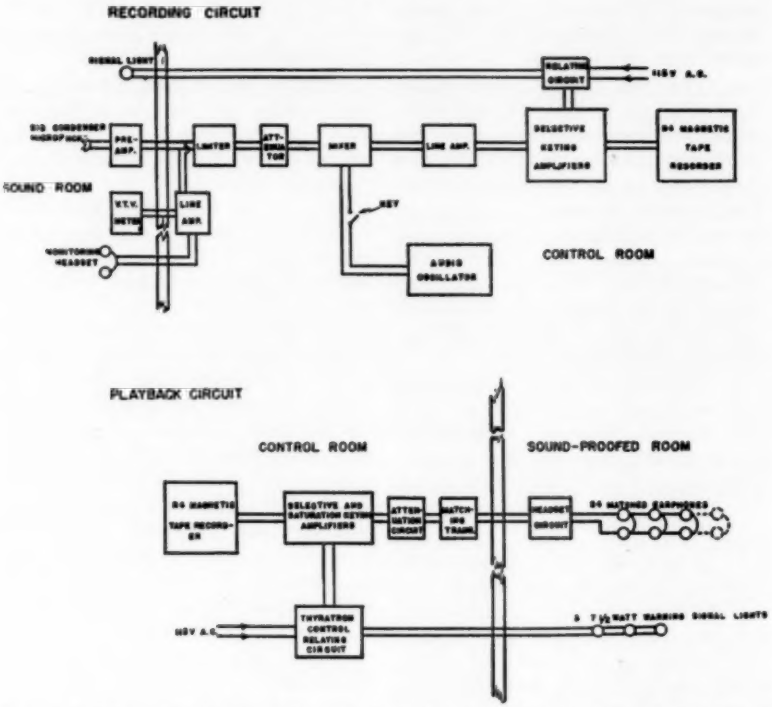

FIGURE 1. Schematic of the recording and playback systems plus the circuit of the warning signal lights showing control and soundproofed room relationships.

as they were recorded. The dynamic range for low distortion of the tape recorder was 55 db. Each line of 10 or 12 syllables was recorded at one intensity level and the levels in any one series were presented at randomized sound pressures in relation to a constant zero attenuation level. The warning signal light keying tone was not attenuated. The announcement of each line of each series was recorded at a fixed level.

The playback system consisted essentially of two channels, (a) that which conducted stimulus syllables to the earphones, and (b) the circuit which activated the warning signal light.

The magnetic tape was played back upon the same Stancil-Hoffman machine that recorded the syllables and the signal activating tone. These two signals, at a constant playback level, were sent through a selective amplifier which 'picked-off' the 16.5 kc pure tone and allowed the speech signal to go into a matching transformer (500/200 ohms). The output fed the earphone circuit of 12 matched sets of ANB-H-1 earphones, in NAF 48490-1 type earphone cushions, arranged for two ear listening. The ear-

phone circuit and signal lights were located in the soundproofed room, the rest of the circuit was located in the control room.

The 16.5 kc tone, picked off the output of the playback by the selective amplifier, was fed into a saturation amplifier whose tube, when driven to saturation, closed a relay. The signal from the relay activated a time variable thyratron circuit. This closed a relay for two seconds completing the circuit to the three warning signal lights placed within the soundtreated room at the feet of the listeners.

Results

Inasmuch as the data were obtained using two methods of judgments the results were treated separately for each method. The two functions (audibility and recognition) were compared after the separate analyses were made.

Audibility. For the audibility series the data were fitted to a straight line function by the method of least squares (*3*) and tested for linearity by Case IV of Lindquist and for goodness of fit by Case VI (*4*). The intersection of this line and the 75 per cent correct ordinate (psychophysical threshold corrected for chance) was defined as the threshold of audibility for that particular sound either initial or final position in the syllable (*2*). One standard error of proportion was used as an indication of possible significant differences between threshold values on the same sound (*5*). Because the attenuation levels at which the initial and final consonant sounds were presented were

TABLE 1. Audibility threshold values of the eight voiced cognate consonant sounds and the vowel [ʊ] in relation to the fixed gain of the sound system. Each value represents the intersection of the 75 per cent ordinate and the line of best fit derived from five mean attenuation levels, 1440 judgments.

Sounds	*Threshold Values db Attenuation*		*Standard Error of Proportion in db ±*	*Decibels above the Threshold Level of Vowel* [ʊ]		*Rank Order of Threshold Attenuation Values of Sounds in Relation to the Vowel* [ʊ]	
	Initial	*Final*		*Initial*	*Final*	*Initial*	*Final*
g	20.7	25.3	2.8*	18.3	13.7	7	5
b	28.1	23.2	5.4	10.9	14.8	4	6
v	18.6	16.7	4.5	20.4	22.3	8	8
d	35.1	31.3	4.4	3.9†	7.7	1	1
z	26.0	27.5	1.9	13.0	11.5	6	4
ð	26.4	24.0	3.0	12.6	15.0	5	7
dʒ	30.9	29.5	1.5	8.1	9.5	2	3
ʒ	29.7	31.2	1.6	9.3	7.8	3	2
ʊ	39.0		1.5				

* Threshold values differing by more than 1 standard error of proportion.
† Threshold values differing less than 1 standard error of proportion from vowel [ʊ].

not identical, it was impossible to test the fitted lines for trend differences, or differences between means, therefore it was necessary to use the standard error of the proportion as an indication of threshold variation.

It will be seen by reference to Table 1 that the audibility thresholds of the sounds in the initial and final positions, except [g], are separated by less than one standard error so that it was impossible to reject the hypothesis that the initial and final audibility thresholds were different for seven of the eight sounds. The threshold for [g] was less than two standard errors of proportion from the mean, a difference which may fall within experimental (and/or plotting) error.

The audibility (detectability) threshold values for the consonant sounds ranged from [d] (initial 35 and final 31 db of attenuation), the sound 'heard' at the lowest sound pressure level, to [v] (19 and 17 db of attenuation), which required the greatest sound pressure level to be audible. This range encompassed some 14 to 16 db. The threshold values for each sound are given in Table 1.

All of the sounds, in both syllabic positions, except the initial [d], were well outside of the one standard error of proportion when compared with the threshold of the total syllable, i.e., the vowel, whose threshold value was found to be 39.0 db of attenuation. It is impossible to determine with the presently available equipment whether this relatively high intensity ratio (.9) between the initial [d] and the vowel is based on a 'true' sound pressure level of the consonant or if the modification of the vowel by the [d] affected the actual judgment being made by the listeners. It will also be noted from Table 1 that the rank order of the final [d] sound was the same as for the [d] in the initial position. The intensity values assigned by Fletcher (*1*) and Sacia and Beck (7) to the [d], without regard to its position in the syllable, would not predict such a high perceptual level for the [d] sound.

A further indication that the audibility thresholds were similar was that a Spearman Rank Order correlation coefficient between the initial and final positions gave a rho of .857 (*8*). This index by itself would not be a creditable indication of similar level but in combination with the other audibility data helped to substantiate the hypothesis of no difference between initial and final audibility thresholds.

Recognition. The recognition data were plotted, the data were tested for linearity (Lindquist's Case IV), tested for trend differences and/or differences between means by Case XII of Lindquist (*4*). The data were then transposed to semi-logarithmic or double-logarithmic functions. The resultant transposed curves were linear (*2*). The intersection of the logarithmic fitted lines and the 50 per cent correct ordinate defined the recognition thresholds.

The recognition thresholds do not show the same degree of correlation as do the audibility thresholds. As in the audibility judgments, however, the consonant [d] was recognized at a lower sound pressure level than any of the other seven consonants. This particular correspondence was unique, however. The thresholds for [d] were obtained with 21.7 db of attenuation for the initial position and 24.6 db attenuation for the final. Table 2 lists the thresholds, their standard errors of proportion, the decibel differences 'above' the vowel, the differences be-

TABLE 2. Recognition threshold values of the eight voiced cognate consonant sounds in relation to the fixed gain of the sound system. Each value, initial and final, was obtained from the intersection of the 50 per cent ordinate and the line of best fit (transposed scores fitted by the Method of Least Squares) derived from the means of 16 attenuation levels each sound in each position receiving 144 to 432 judgments.

Sounds	*Recognition Threshold Values in db Attenuation*		*Standard Error of Proportion in db ±*	*Difference Above Audibility Threshold (db)*		*Difference Above Level of Vowel (db)*		*Rank Order of Sounds in Relation to Vowel Level*	
	Initial	*Final*		*Initial*	*Final*	*Initial*	*Final*	*I*	*F*
g	21.1	16.5	1.3	–.4*	8.8	17.9	22.5	2	4
b	11.2	14.5	2.0	16.9	8.7	27.8	24.5	7	5
v	12.4	10.0	1.9	6.2	6.7	26.6	29.0	6	6
d	21.7	24.5	1.8	13.4	6.7	17.3	14.4	1	1
z	15.4	19.2	1.5	10.6	6.3	23.6	19.8	4	2
ð	12.9	7.7	1.8	13.5	16.3	26.1	31.3	5	7
dʒ	18.6	5.4	2.2	12.3	24.1	20.4	33.6	3	8
ʒ	5.6	18.4	3.0	24.1	12.8	33.4	20.6	8	3

* Threshold values differing less than 1 standard error of proportion above the audibility threshold.

tween the audibility and recognition thresholds, and the rank order of each sound in each position in relation to the fixed gain of the sound system. The range of the initial recognition thresholds varied from that of [d], mentioned above, to 5.6 db for the [ʒ] sound, a range of 16.1 db. The final consonants thresholds varied from the value for the [d] to 5.4 db for the threshold of the [dʒ] sound, a range of 19.1 db. In all instances there was a significant difference between the recognition thresholds for the initial and final positions of the same consonant, but the differences were not systematic. This lack of systematic variation in threshold level resulted in a Spearman rho coefficient of correlation of .214 between the rankings of the recognition attenuation levels, initial and final.

It will be seen by reference to Table 2 that there was a –.4 db difference between the audibility and recognition threshold for initial [g]. This probably does not indicate a real difference for this particular sound but nearly parallels the results obtained on the voiceless consonant thresholds previously reported in which no 'aphonemic interval'[2] was found (*6*). A Spearman rho between the initial threshold rank order of audibility and intelligibility was .190.

The recognition threshold values for the voiced consonants in the final position in relation to the vowel did not vary as widely as the initial. For each sound in the final position there

[2]This term was 'invented' to describe a similar auditory phenomenon to that reported by Pollack for pure tone which he termed the 'atonal interval'.

was a significant 'aphonemic interval.' A Spearman rho gave an index, while not significant, that indicated some correlation: .607.

The results indicated that the listeners were unable to recognize the consonant sounds at, or near, the same level at which they were detected. This, of course, must be interpreted in the light of all responses being made to one voice. The responses show that with one exception, the initial [g], there was a definite 'aphonemic interval.'

Sounds Heard as Substitutions for the Stimulus Consonants. The sounds that were heard as substitutions by the listeners were tabulated and percentages of the total number of substitutions for each sound were calculated. Any statements about the 'substitutions' must be interpreted with regard to the somewhat forced or limited choices that the listeners could make, due to the use of the multiple-choice response form.

Within the degrees of freedom of responses, the reported substitutions for each of the eight consonant sounds in both positions are shown in Table 3. The percentages were calculated from the number of actual substitutions reported by the listeners and do not include the number of times that they reported a 'zero,' or not hearing. While percentages for all of the sounds are shown in Table 3, the ones which are ranked as the most fre-

TABLE 3. The percent of the total number of substitutions that each sound was reported as a substitution for each of eight voiced cognate consonant sounds in the initial and final position. The numbers in parentheses following three of the values in each column indicate the three highest percentages in order as ranked.

Sounds Substituted for Stimulus Consonants	*Stimulus Consonants as Articulated*							
	g		b		v		d	
	Initial	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*
g			14.8(2)	47.2(1)	13.7(3)	33.7(1)	14.7	22.4(1)
b	6.7	30.7(1)			45.6(1)	24.1(2)	11.7	10.4
v	9.7	20.9(3)	58.2(1)	23.8(2)			14.7	10.8
d	28.1(1)	23.8(2)	7.0	13.0(3)	7.4	13.2		
z	10.1	6.9	3.5	4.3	4.5	6.0	17.4(1)	14.9(2)
ð	17.5(3)	9.1	9.9	7.3	23.2(2)	19.0(3)	15.4(3)	12.2
dʒ	18.4(2)	3.9	3.2	2.1	2.9	2.1	15.7(2)	14.9(2)
ʒ	9.2	4.7	3.4	1.9	2.8	1.9	10.2	14.3(3)
	z		ð		dʒ		ʒ	
	Initial	*Final*	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*
g	11.8(3)	12.4	12.2	7.6	23.5(2)	35.8(1)	12.3(2)	16.9(3)
b	6.2	3.8	10.3	6.7	3.2	2.2	1.1	2.9
v	10.2	25.8(1)	20.1(2)	14.1(3)	3.8	1.6	1.3	1.8
d	10.1	8.3	15.8(3)	36.4(1)	11.4(3)	17.8(3)	3.4	9.8
z			29.5(1)	25.2(2)	11.0	8.2	9.4	30.1(2)
ð	29.8(1)	17.0(3)			7.9	4.9	4.5	5.2
dʒ	7.4	7.8	6.4	3.8			68.1(1)	33.3(1)
ʒ	24.5(2)	24.9(2)	5.6	6.3	39.3(1)	29.5(2)		

quent, i.e., 1, 2 and 3, are based on an N of not less than 200. The possible number of judgments of each sound, totaled over the 16 attenuation levels averaged 2798.

It was evident that the sounds most frequently heard as substitutions for a particular sound often did not follow the plosive-continuant characteristics of the stimuli. The [g] was reported as the most frequent substitution for the final [b], [v], [d] and [dʒ]. The [v] in the final position in ordinary conversational speech rarely has plosive characteristics. The most frequently heard substitution for [b] was [v] in the initial position and [g] in the final position. For initial [v], [b] was the most frequent substitution and [g] for the final position. Perhaps the most interesting and logical substitutions were for the initial [dʒ] and [ʒ] sounds. Each had the highest percentage of substitutions for each other in the initial position and [ʒ] final. For the final [dʒ], however, the [g] was the most frequent. In the previously mentioned report concerning the voiceless consonants it was also noted that some seemingly inexplicable changes were reported as substitutions for the stimulus sounds. Where the stimulus sound was continuant in character the most frequent substitution would often be a plosive, and conversely. No apparent logical patterning seems evident in this or the previous investigation.

Calculated Sound-Pressure Levels of the Vowel [ʊ]. Calculated sound pressure levels were obtained and while they must be considered as rough approximations, indicated that the syllables, hence the vowel, were detected at very low levels in comparison to the arbitrary acoustic reference of .0002 dynes/cm^2. The measures were made of the voltages across the headset and the power ratings referred to the manufacturer's calibration curve of the earphones plus the readings of of the generated voltages from the output of a calibrated condenser microphone under the earphone cushion of a headset. These calculations gave a value of threshold of the vowel [ʊ] as 25 db above the acoustic zero reference point. Calculations were made for the eight sounds concerning the audibility and recognition thresholds relative to the vowel.

Summary and Conclusions

The present study was concerned with the audibility and recognition sound-pressure level functions of the voiced cognate consonant sounds: [g b v d z ð dʒ ʒ]. From these functions the psychophysical thresholds in each syllable position in relation to the constant vowel [ʊ] were derived.

The eight consonant sounds and the single vowel were combined in a random manner into nonsense syllables of the CV, VC, and CVC type and recorded by a single voice. These recorded combinations were presented by a high-fidelity magnetic-tape recorder to 288 (NROTC) listeners who listened with both ears over an earphone circuit in a sound treated room. The subjects were in groups of 12. Some of these groups listened for audibility and others for recognition.

Three series were designed to provide data from which the audibility functions could be obtained. Recognition functions were derived from the data of a fourth series. Each listener heard two series, hence, each series had in effect 144 listeners.

The following conclusions may be expressed after taking cognizance of the conditions with which the data were obtained, i.e., 288 listeners, one

caller articulating nonsense syllables, recorded and played back over a particular sound system.

1. The audibility thresholds of the eight voiced cognate consonants do not appear to be significantly different, particularly 7 of the 8 consonants studied. It is unlikely, even for the one slightly dissimilar threshold, that syllabic position makes a real difference in the level at which these sounds can be detected.

2. The sound-pressure levels representing the audibility thresholds for all of the sounds, except the initial [d], were significantly above the level necessary to detect the presence of the vowel.

3. For all sounds, except the initial [g], it was necessary to increase the sound-pressure levels significantly above the detection level for those sounds to be identified (recognized) 50 per cent of the time. This indicates a sound-pressure level range between the threshold of audibility and the thresholds of recognition. This was termed 'aphonemic interval.'

4. There were real differences between the levels at which a sound could be recognized in the initial position in relation to the vowel and at which it could be recognized in the final position. No pattern appeared to indicate which threshold would necessitate a higher level for one syllabic position as compared with the other. The low level of agreement between the rankings of the recognition thresholds values is indicated by a Spearman Rank Order correlation of .214.

5. The substitutions that were reported for the stimulus sounds at the low sound-pressure levels used in this study did not follow any logical pattern when the first three most frequent substitutions were compared. The changes toward, or away from, similar phonetic characteristics were unpredictable.

6. The audibility thresholds of the vowel and the eight voiced cognate consonants were probably close to the threshold of pure tone.

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Some Vocal Effects Of Different Reading Passages And Time Delays In Speech Feedback

Bernard Spilka

THE VOCAL CORRELATES of the phenomenon termed delayed speech feedback or delayed side-tone feedback have received considerable attention within the past few years from research workers in the fields of voice science and psychology. Following early discussions of some vocal influences of side-tone delay by Lee (*3*, *4*, *5*), Black (*1*) conducted an investigation of these effects with respect to the variable of delay time of feedback. In his study measurements of syllable duration and maximum vocal intensity were obtained for each subject of the experiment under each of 11 time-delay conditions. Black found that syllable duration increased with delay time to a maximum at .18 seconds delay and then decreased consistently as the delay time increased to .30 seconds, which was the longest delay time he employed. There was also an increase in maximum vocal intensity measured in db as the time delay increased to .18 seconds. For intervals longer than .18 the maximum vocal intensity varied irregularly.

In another study, Tiffany and Hanley (*6*), using a delay interval of .14 seconds in conjunction with a 100-word reading passage and three levels of side-tone sound pressure level (35 db, 55 db, and 75 db above an auditory threshold for speech), found that the vocal rate-duration changes accompanying delayed speech feedback became more marked as side-tone intensity increased. An experimental control introduced by these researchers was the use of three groups of 10 subjects each, thus allowing each subject to respond under only one condition of side-tone delay.

The study reported here was conducted, in part, to confirm and extend the findings of Black (*1*). In the design of the experiment it was considered desirable to utilize some of the experimental modifications employed by Tiffany and Hanley (*6*). In particular, two controls suggested by these researchers were used in the present study. These were:

1. Use of reading passages of greater length;

2. Presentation of only one feedback condition to a subject.

It was believed that these modifications in procedure would result in the elimination of confounding effects attributable to the learning experience

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of talking under two or more feedback conditions. In addition, it was desired to investigate possible interaction effects between feedback delay times and reading materials, an investigation made possible by the changes in procedure.

In brief summary, this investigation was conducted to determine the vocal rate-duration and intensity correlates of delayed speech feedback with time of feedback delay and reading materials variable.

Experimental Procedure

Subjects. The subjects employed in this investigation were 128 male students, ranging in age from 18 to 27 years. All were from a basic speech course at Purdue University.

Instrumentation. The instruments which were used for recording and measuring the speech samples studied in this investigation were: (1) A Magnecord Corporation high fidelity magnetic tape recorder with type PT6-AH recording unit and type PT6-J amplifier. This instrument was modified so that it could be employed for delayed feedback research. The complete unit is known as the Magnecorder. (2) A McIntosh Engineering Laboratory amplifier type 20W-2 and McIntosh amplifier equalizer unit type AE-2A. (3) An Altec Lansing Corporation M11 microphone system with Altec 21B miniature condenser microphone. (4) Two Hewlett-Packard Corporation step attenuators covering a range of 110 decibels in one decibel steps, model 350A. (5) A Sound Apparatus Company High Speed Power Level Recorder, Model HPL-E. (6) Purdue Speech Sound Timer (7). (7) Three headsets, type ANB-H-1. (8) One Astatic Corpora-

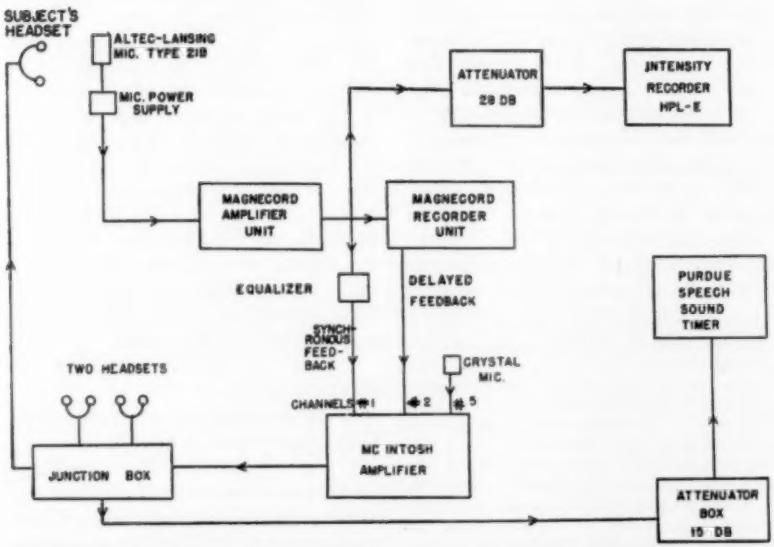

FIGURE 1. Block diagram of synchronous and delayed speech feedback circuits and instrumentation for voice variable measurements.

tion crystal microphone, type JT-30. A block diagram of the circuit containing the above instruments may be seen in Figure 1.

The operation of the circuit may be described as follows: The speech signal was transmitted by the Altec Lansing microphone system to the input of the Magnecord amplifier unit. All signals for which synchronous feedback was intended were transmitted to the subject's earphones through an equalizer and channel 1 of the McIntosh amplifier. The equalizer served to equate the frequency response characteristics of the synchronous and delayed speech feedback channels. Signals which were transmitted to the subjects under delayed feedback conditions were coupled first from the Magnecord amplifier unit into the Magnecord recorder section which produced the side-tone delay, and the resulting delayed signal reached the subject by means of channel 2 of the McIntosh amplifier. Measurements of certain attributes of each subject's speech were obtained simultaneously on the Purdue Speech Sound Timer (a device from which certain rate-duration data may be obtained) and the model HPL-E power level recorder. Hewlett-Packard attenuators were placed in the circuits of these two instruments so that the speech signal voltages could be adjusted to obtain optimal recording performance.

In order to mask air and bone conduction auditory cues for simultaneous speech under the delayed side-tone condition, and to effect as much change as possible in the speech of subjects, it was believed desirable to transmit a subject's speech back to him at a greatly increased intensity level (*6*). Empirically a level was decided upon which appeared to be near the threshold for discomfort, but was still bearable. The procedure employed to determine this level was as follows: A Harvard noise generator was pre-set so as to produce 'random noise,' and this output was coupled through an amplifier to a speaker. Measurement of this noise by a General Radio, Type 759B sound level meter which was placed next to the Altec 21B microphone receiving this noise, showed it to be 84 db. The volume unit (VU) meter on the Magnecorder was set to read zero VU, the recording level which was used for the testing of the subjects. The gain setting for this level was 25 dial units. The McIntosh amplifier gain was set at four dial units, the setting which was used throughout the experiment. The acoustic output of the headset used by the subjects, type ANB-H-1, was measured with an ADC 'artificial ear' and a Ballantine '300' meter, and was found to be 129 db. This level was recorded by the HPL-E intensity recorder at a point 32 db above the HPL-E tape's zero reference point. Thus for *steady state* conditions with a signal which should not be affected by conditions of resonance in any part of the circuit, and for a gain setting in the middle of the used range, the difference in intensity between the signal reaching the microphone and the signal at the headset was 45 db. In actuality, the above procedure set a constant level for side-tone playback for both the synchronous and delayed feedback conditions. Since the intensity levels of the speech signals for different subjects varied, and the corrections necessary to compensate for such variation were made by the Magnecorder gain control, the difference between initial input level and feedback level was not always 45 db.

Computation revealed that, on the average, side-tone intensity for the 128 subjects was 46.6 db above their initial vocal intensity, with a standard deviation of 3.1 db. As Table 1 reveals, the mean intensity levels in db (*re* the HPL-E tape zero reference) were 15.23 for the synchronous condition and 22.96 for the delayed condition. Since a line at 32 db on this paper indicates a level of 129 db, the calculated levels were for synchronous feedback 112.23 db, and for delayed side-tone 119.76 db (129 db = 32 db on HPL-E; 129 db − [32 db − 15.23 db] = 112.23 db, etc.).

It was mentioned earlier that the Magnecorder was modified so that it might be employed in delayed side-tone research. The chief modification consisted of the addition of a playback head to the recording unit. The erase, record, and new playback heads of the recorder were arranged so that a 42 inch loop of recording tape would travel first over the erase head, which removed all previously recorded signals. The tape then passed over a recording head. The playback head then picked up these recorded signals which were transmitted back to the talker. The playback head was mounted so that it could be moved in a line, from .93 to 6.10 inches from the record head. The distance between the playback and record heads and the tape speed determined the time delay between the impressing of a signal by the record head and the feedback of that signal through the playback head. The panel on which the playback head was mounted was calibrated in steps of .031 seconds from a delayed feedback time of .062 seconds to .406 seconds when the tape speed was 15 inches per second. In the present study the delayed times employed were .094, .125, .156, .187, .219, .250, .312, and .375 seconds.

The reading materials which were employed in the present study consisted of eight passages which ranged in length from 73 to 259 words and contained from 98 to 357 syllables.

Method. The subjects were taken individually into the sound-treated laboratory. Each subject was seated at a desk upon which was clamped the Altec 21B microphone, so mounted that it was possible to place the tip of the microphone between three and four inches from the subject's mouth. The subject was instructed to maintain this distance at all times during the testing period. A pair of ANB-H-1 headphones mounted in a helmet and connected to the feedback channel of the circuit was worn by the subject. Thus the side-tone was received primarily through the headset. The passage to be read was placed on a clipboard situated directly in front of the subject and slightly above the microphone.

Following the initial seating and instruction of the subject, the experimenter conducted the testing procedure from another sound-treated room which contained the feedback and recording equipment. Contact with the subject was maintained by means of a microphone which was connected through channel 5 of the McIntosh amplifier. The remaining instructions were communicated to each subject through this system.

During a preliminary reading of the passage, the experimenter manipulated the gain control for the Magnecord amplifier so that the majority of the subject's vocal intensity peaks fell between the −1 and +1 marks on the VU meter. This procedure was employed in an effort to achieve a cer-

tain consistency of the signals recorded on the sound timer and power level recorder.

Following this first reading of the passage, the subject was instructed to reread it. As the subject completed an introductory phrase to the passage, the experimenter set the power level recorder and the sound timer in operation. When the subject finished reading the complete passage, these instruments were shut off, the dial readings of the timer were recorded, and the tape was removed from the power level recorder. The first two readings of the passage were conducted under conditions of synchronous feedback. A third reading was then conducted under the condition of delayed feedback. Before this reading, the subject was given instructions similar to those of the first two readings, with the addition of a warning that on this trial he might experience some difficulty in reading. The subject was told not to stop reading nor to laugh when experiencing difficulty.

The McIntosh feedback control was set to the delayed feedback channel, and as the subject read, recordings of his vocal rate and intensity again were taken. At the completion of this reading the subject was informed that the testing period was over. He was then requested not to tell future subjects about the experiment and was dismissed. This procedure was followed for all 128 subjects who participated in this study.

In order to effect equal randomization of passage and delay-time effects, the eight passages and eight delay times were combined and presented to the subjects in such a manner that each individual read only one passage and was subjected to one delay-time condition of side-tone feedback. Each of the 64 possible passage-delay-time combinations was presented to two subjects. By means of this procedure 16 subjects read each passage and responded to each delay-time condition.

Statistical Analysis. The hypotheses to be tested with regard to the voice variables measured are stated in the null form as follows:

1. *Delayed speech feedback conditions do not result in any significant vocal changes.*

2. *Any vocal changes which occur as a function of conditions of delayed feedback are:*

a. *unrelated to the reading materials employed to study these changes;*

b. *unrelated to the duration of side-tone delay.*

3. *No significant interaction exists*

TABLE 1. Basic plan of research design for analysis of variance. Two conditions, eight passages, eight delay times, 128 subjects.

Delay Time	*S's*	*Passage 1*			*Passage 8*		
		Synchronous	*Delayed*		*Synchronous*	*Delayed*
.094 sec.	1	X_{1s}	X_{1d}	. . .	112	X_{112s}	X_{112d}
	2	X_{2s}	X_{2d}		113	X_{113s}	X_{113d}
. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
. . .	. . .	. . .	. . .		. . .	. . .	. . .
. . .	. . .	. . .	. . .		. . .	. . .	. . .
.375 sec.	15	X_{15s}	X_{15d}	. . .	127	X_{127s}	X_{127d}
	16	X_{16s}	X_{16d}		128	X_{128s}	X_{128d}

TABLE 2. Means and standard deviations obtained for voice variables under conditions of synchronous and delayed speech feedback.

Voice Variable	*Conditions*			
	Synchronous Feedback		*Delayed Feedback*	
	M	*S D*	*M*	*S D*
Syllable Duration (sec.)	.112	.025	.271	.116
Per cent Phonation Time	42.96	8.46	66.92	11.34
Mean Intensity in db	15.23	4.72	22.96	4.77
Intensity Variance in db	7.64	.53	8.86	.85

between the employed reading materials and the duration of side-tone delay.

The physical voice variable measures which were employed were: (1) Mean vocal intensity (db above the zero reference on the HPL-E intensity recording tape); (2) variance of vocal intensity (the variance or σ^2 of the vocal intensity peaks recorded on the HPL-E tapes)[1]; (3) syllable duration (total passage reading time/number of dictionary syllables in the passage); and (4) per cent phonation time (total phonation time/total reading time × 100).

Evaluation of the obtained results was accomplished by means of the analysis of variance (2). In summary, the design which was thus analyzed contained scores for 128 individuals for each of whom voice variable scores were obtained under the two conditions of synchronous and delayed side-tone. A total of 256 scores thus resulted, and since each passage delay-time combination was represented by two subjects, these cells each contained four scores. An illustration of this design is presented in Table 1.

[1]Because variances are not normally distributed, a logarithmic transformation of these data was conducted prior to the application of the analysis of variance procedure summarized in Table 6.

Results and Discussion

Table 2 summarizes the results obtained on all of the voice variables studied. It can be seen that persons, when subjected to delayed speech feedback, tended, on the average, to increase the time duration of their syllables, spend more speaking time in actual phonation, speak louder, and become more variable in their usage of vocal intensity. In order to test the hypotheses formulated in the preceding section, each of these changes was further evaluated by means of the analysis of variance technique.

Turning to a consideration of the results obtained on the various rate-duration measures studied, it may be seen in Tables 3 and 4 that both the syllable duration and per cent phonation time changes which occurred as a function of the delayed speech feedback conditions were highly significant. The Between Conditions F ratio of 242.178 obtained in the analysis of the syllable duration data demonstrates that relatively large and consistent differences existed between the conditions of synchronous and delayed feedback with respect to this vocal measure. Inspection of the original data revealed that average syllable duration increased for every subject under the condition of delayed speech feedback. This result is consonant with that for syllable duration ob-

TABLE 3. Analysis of variance of results obtained with syllable duration.

Source of Variance	*Sums of Squares*	*df*	*Mean Square*	*F ratio*	*P*
Between Passages	.096062	7	.013723	1.736	NS
Between Delay Times	.039465	7	.005638	. . .	
Passages × Delay Times	.411206	49	.083920	10.615	.01
Within Cells	.505954	64	.007906*		
Between Conditions	1.604181	1	1.604181	242.178	.01
Conditions × Passages	.021136	7	.003019	. . .	
Conditions × Delay Times	.028919	7	.004131	. . .	
Conditions × Passages × Delay Times	.270320	49	.005517	. . .	
Conditions × Within Cells	.423941	64	.006624†		
Total	3.401184	255			

* The within cells mean square serves as the error term for the between passages, between delay times, and passages × delay times sources of variance.

† The conditions × within cells mean square serves as the error term for the between conditions, conditions × passages, conditions × delay times, and conditions × passages × delay times sources of variance.

(Both of these error terms are employed in Tables 4, 7, and 8 as in the above analysis.)

tained by Black (*1*), and previously noted by Lee (*3*, *4*).

That per cent phonation time was similarly affected by delayed speech feedback is quite apparent from the Between Conditions *F* ratio of 547.158 presented in Table 4. This *F* ratio, as well as the one obtained with syllable duration, indicates significance beyond the .001 probability level. It is to be noted that even though, in all cases, actual speaking time increased under delayed feedback, this change was due primarily to increases in phonation time. Absolute silent time also tended to increase; however, this

TABLE 4. Analysis of variance of results obtained with per cent phonation time.

Source of Variance	*Sums of Squares*	*df*	*Mean Square*	*F ratio*	*P*
Between Passages	3327.093	7	475.299	3.866	.01
Between Delay Times	872.493	7	124.642	1.014	NS
Passages × Delay Times	6470.361	49	132.048	1.074	NS
Within Cells	7867.355	64	122.927		
Between Conditions	36737.868	1	36737.868	547.158	.001
Conditions × Passages	303.839	7	43.406	. . .	
Conditions × Delay Times	493.182	7	70.455	1.049	NS
Conditions × Passages × Delay Times	2812.164	49	57.391	. . .	
Conditions × Within Cells	4297.170	64	67.143		
Total	63181.525	255			

TABLE 5. Means and standard deviations of degree of change occurring in voice variables with various delayed speech feedback delay times.

Delay Times (sec.)	Syllable Duration		Per cent Phonation Time		Mean Intensity in db		Intensity Variance in db	
	M	SD	M	SD	M	SD	M	SD
.094	.143	.039	25.57	10.30	8.03	1.06	2.24	.468
.125	.134	.059	22.57	9.63	6.75	2.28	1.94	.273
.156	.183	.088	28.58	8.89	8.10	2.36	2.02	.107
.187	.128	.050	19.26	6.80	7.35	2.19	2.30	.250
.219	.161	.079	24.88	8.89	8.02	2.16	1.70	.096
.250	.161	.076	23.66	4.94	7.70	1.66	2.16	.123
.312	.155	.046	24.83	4.27	8.31	3.42	2.07	.177
.375	.193	.108	24.51	5.27	7.52	2.18	2.41	.211

latter change was considerably smaller than that which occurred in phonation time.

The only other significant *F* ratio obtained with syllable duration revealed a noteworthy interaction existing between the variables of reading passage and delay times. This finding demonstrates that the reading material employed and the feedback delay time interval had an effect together on syllable duration, an effect above and beyond that which would be produced if these variables were introduced independently. In fact, in this experiment neither of the *F* ratios of the component factors of this interaction was significant when tested alone. The finding that syllable duration did not vary significantly with change in delay time fails to support the finding of Black (*1*) noted earlier. Tables 5 and 6 which contain a summary of these data with particular reference to the delay times and passages also fail to reveal any suggestion of the positive relationship between syllable duration and delay time obtained by Black.

In Table 4, it may be noted that the rate-duration results obtained on syllable duration were not supported by similar findings with per cent phonation time. No significant passages-by-

TABLE 6. Means and standard deviations of degree of change occurring in voice variables with various passages.

Passage	Syllable Duration		Per cent Phonation Time		Mean Intensity in db		Intensity Variance in db	
	M	SD	M	SD	M	SD	M	SD
A	.168	.115	19.44	5.72	7.10	2.31	1.52	2.42
B	.130	.044	22.89	5.19	5.58	1.46	2.14	1.51
C	.164	.088	26.23	10.90	7.68	1.75	2.74	1.76
D	.151	.063	25.84	11.45	7.36	2.01	2.91	1.50
E	.187	.090	24.52	5.27	7.83	1.54	2.44	1.52
F	.129	.045	27.31	8.18	9.16	1.51	1.61	1.39
G	.156	.051	23.41	6.63	8.29	1.92	1.62	1.34
H	.173	.048	24.23	5.94	8.80	3.30	2.23	1.74

TABLE 7. Analysis of variance of results obtained on mean vocal intensity.

Source of Variance	*Sums of Squares*	*df*	*Mean Square*	*F ratio*	*P*
Between Passages	558.839	7	79.834	2.253	.05
Between Delay Times	127.660	7	18.237	. . .	
Passages × Delay Times	2173.1933	49	44.351	1.252	NS
Within Cells	2267.895	64	35.436		
Between Conditions	3827.664	1	3827.664	743.524	.001
Conditions × Passages	69.087	7	9.870	1.917	NS
Conditions × Delay Times	13.941	7	1.992	. . .	
Conditions × Passages × Delay Times	254.802	49	5.200	1.010	NS
Conditions × Within Cells	329.503	64	5.148		
Total	9622.584	255			

delay times interaction was found as had occurred with syllable duration, but a significant passages effect was revealed. This latter result suggests that the interpretation of per cent phonation time results obtained in studies of this type should be qualified with reference to possible effects due to the vocal materials employed. The per cent phonation time data for the various passages used are presented in Table 6.

The highly significant conditions effects noted in the analysis of the rate-duration measures were also revealed for the vocal intensity variables studied. For both mean vocal intensity and vocal intensity variance, the computed *F* ratios were significant beyond the .001 level of confidence (see Tables 7 and 8). In addition, significant passage effects were also noted for both vocal intensity and vocal intensity variance. This again demonstrates the importance of using care in the selection of materials employed to elicit vocalization in studies of this type. A significant delay-times effect was found in the analysis of vocal intensity variances (see Table 8), but none in the case of mean vocal intensity. It should be pointed out that

TABLE 8. Analysis of variance of results obtained on logarithms of vocal intensity variances.

Source of Variance	*Sums of Squares*	*df*	*Mean Square*	*F ratio*	*P*
Between Passages	.56726	7	.08104	5.172	.01
Between Delay Times	.23838	7	.03405	2.173	.05
Passages × Delay Times	1.06027	49	.02164	1.381	NS
Within Cells	1.00310	64	.01567		
Between Conditions	3.77947	1	3.77947	272.689	.001
Conditions × Passages	.28502	7	.04072	2.938	.01
Conditions × Delay Times	.22519	7	.03217	2.321	.05
Conditions × Passages × Delay Times	.80217	49	.01637	1.181	NS
Conditions × Within Cells	.88731	64	.01386		
Total	8.84817	255			

the significant delay-times effect revealed in Table 5 is not the result of a consistent positive trend between these variables, as was found by Black (*1*) with the measures he employed. Black also obtained significant delay times effects with all the variables he studied, whereas the present investigation found significant differences only with vocal intensity variance. Also, no suggestion of the consistent positive relationships between delay time and the voice variables was found as Black (*1*) had previously noted. In brief, the discrepancies between the findings of the present study and those of earlier investigations suggests a basis for further examination of the methodology and factors involved in such research.

Summary and Conclusions

An investigation was conducted to determine some vocal rate-duration and intensity correlates of the phenomenon termed delayed speech or side-tone feedback. The experimental design and statistical analysis were planned to achieve greater control than had been previously exercised in similar investigations. Specifically, the variables of sample size, independence between delay-times, length and content of reading passages, and the duration of the delayed side-tone intervals were included among elements subjected to rigid control.

Each of two subjects read a selected passage under a given delay-time. The eight passages and eight delay-times used resulted in a 64-cell design. The results were recorded in terms of syllable duration, per cent phonation time, mean vocal intensity, and vocal intensity variance. The analysis of variance technique was used to analyze the statistical significance of the results. These results may be summarized as follows:

1. Under conditions of delayed speech feedback, there appear to occur: (a) a lengthening of average syllable duration; (b) an increase in per cent phonation time; (c) an increase in mean vocal intensity; and (d) a tendency for vocal intensity variations to become greater.

2. Some of the vocal changes which occur under conditions of delayed speech feedback appear to be related to the reading materials employed. The voice variables of per cent phonation time, mean vocal intensity, and vocal intensity variance are involved in such relationships. The syllable duration changes which were found did not appear to be related to the reading passages used.

3. No relationship was found between the length of the delayed speech feedback time interval and the changes which occurred in average syllable duration, per cent phonation time, and mean vocal intensity. In contrast, it was found that the changes which occurred in vocal intensity variance were related to the delay times, but no consistent positive or negative trends were found between these variables.

4. A significant interaction was found between the reading passages and the delay-times employed, with respect to the changes which occurred in average syllable duration under delayed speech feedback conditions.

An important outcome of this investigation appears to be its demonstration of the necessity of incorporating and controlling several more variables in the design than has been done previously in research involving delayed feedback. From the study also emerges the fact that different

findings may result from varying the vocal materials employed. Also, the need for controlling the factor of individual differences in response to delayed speech feedback seems quite apparent. The present study thus calls attention to the need for further research into the basic experimental and mensurational aspects of research in this area.

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The Rating Of Defective Speech By Trained And Untrained Observers

Elinor Horwitz Perrin

MANY TIMES, persons who are neither speech therapists nor have ever taken an academic course in speech therapy find that they must judge the relative defectiveness or normalcy of another's speech. The mother who brings her child to a speech clinic because, in her opinion, he 'lisps badly' is making such an evaluation. The teacher who must refer the children with defective speech to the speech therapist is also usually untrained in making such judgments. The friends who suggest that a person has improved sufficiently to stop taking speech therapy may provide yet another example.

The usual practice is for the professional speech therapist to evaluate a speech defect. It is his opinion that is sought in determining whether a person has or has not a speech defect, evaluating the severity of a speech defect, or judging a speech defect improved after the person has received speech therapy.

Is the opinion of the lay person, who has had no formal training in speech therapy, valid? Or is it only the speech therapist who can evaluate a person's speech? It was the intent of this study to investigate whether or not there is a similarity in the ratings of severity given by therapists and lay persons.

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Several recent studies have also related to the present problem. Schaffer (5) had a group of six professional speech clinicians and six non-clinicians rate 14 pairs of disc recordings (pre- and post-therapy). These recordings included three types of defective speech: stuttering, cleft palate speech, and articulation. Half of the judges rated 'attention speech calls to itself' and half rated 'understandability.' He found that: (1) There was no significant difference in the ratings of the clinicians and non-clinicians on understandability; (2) there was a significant difference in the ratings dealing with attention; (3) the correlation between the average ratings made by the clinicians on understandability and attention was significant at the one per cent level of confidence; (4) the correlation between the average ratings made by the non-clinicians on these two aspects was not significant at the five per cent level; (5) there was no significant difference in the reliability of ratings of clinicians and non-clinicians on understandability; and (6) there was a significantly higher reliability of the ratings of the clinicians than of the non-clinicians on attention.

Schaef (4), using pre- and post-therapy recordings of 20 stutterers, had clinicians and non-clinicians rate each pair on a five-point scale for (1) the severity of stuttering using their own criterion or criteria; (2) the

amount of tension in the voice; and (3) the amount of unfavorable attention the speech calls to itself. Among his conclusions he reported that (1) the inter-judge correlations for the non-clinician's group were significantly higher than those for the experts; and (2) the accuracy with which the ratings were made, using the ratings made by the clinicians who originally handled the subjects in therapy as the validating criterion, was uniform from group to group and from criterion condition to criterion condition.

It was felt that, because of the paucity of data in this area and because of some lack of agreement among the findings of some of the researchers, additional information would be important.

Subjects and Raters

The subjects for this study were seven children who were patients in the University of Pittsburgh Speech Clinic, ranging in age from nine to 13. All of them had clinically diagnosed functional articulation defects (i.e., without immediate organic cause). The number of sound substitutions, omissions, and distortions made by the children ranged from none to five. This number was determined by the experimenter, who listened to repeated playings of the recorded speech of the subjects. The number of different sounds that were substituted, omitted, and distorted was counted for each subject.

Two groups of students served as raters. The untrained group consisted of 26 students enrolled in an introductory psychology course. The age range was from 17 to 27; modal age 19. None of them had taken any courses in speech therapy. The trained group consisted of 13 students enrolled in a course in clinical methods in speech correction. The age range was from 21 to 50; modal age 26. All of them had had many previous courses in speech therapy, all being graduate students majoring in the area.

Procedure

Disc recordings were made of 15 children reading a prepared typewritten passage. This reading material was selected because it contained almost all of the English speech sounds and was appropriate to the children's age level. The children were allowed to familiarize themselves with the passage before recording it, and they were encouraged to ask questions concerning words about which they were not sure.

From these 15 recordings seven were selected on the basis of clarity of recording and representativeness of a continuum of various degrees of defective articulation. The number was restricted to seven in order that they could be played back within a one-hour period. Two of the records had some surface noise, but it was felt that this probably would not be detrimental since all of the raters would be handicapped similarly by it.

Each record was arbitrarily given a number. Then, according to a method outlined by Ross (*3*), each record was paired with every other record in the optimum order for the presentation of paired comparisons. This method was designed to 'eliminate space and time errors, avoid regular repetitions which might influence judgment, and maintain the greatest possible spacing between pairs involving any given member of the stimulus series' (*3*).

These speech samples were recorded in pairs on one continuous magnetic

tape, each pair being preceded by the recorded announcement of its number in the series. The tape recording was used in order to facilitate presentation and to minimize the time of administration.

The tape was then presented to the groups of raters. Each rater was given a mimeographed rating sheet with directions. The writer, who conducted the rating sessions, gave the preliminary instructions. The directions were read aloud while the raters followed along on their papers. They were informed that they would hear recorded samples of defective speech of children, presented in pairs. They were instructed to use the rating sheet to check the voice (of each pair) that sounded the least defective. Then a recorded example was played, the first sentences having many sound substitutions, and the second having none. The raters were asked to indicate by show of hands the voice they would have marked on their papers, and it was emphasized that they were to mark the voice that seemed the least defective to them.

Results

When the ratings had been obtained, each rater was given a letter designation. A score sheet was made, and the rank order of each rater's preferences was determined. The rank orders for the trained and untrained groups were then determined by assigning points to each voice being rated. Thus, if a voice was considered by a judge to be least defective, and therefore in first place in his rank order, it would receive one point. If it was in second place, it would receive two points, and so on. In the case of ties, the number of points was averaged between the tied members. In this way a weighting of 28 points was given to each rater.

The rank order correlation coefficient between the ranks assigned by trained and untrained groups was found to be .822, which was significant at the four per cent level of confidence.

The similarities of ratings among each of the groups of raters was investigated by use of the coefficient of agreement *u* (*2*). This coefficient serves as a measure of reliability, and it is virtually the same as the average of the intercorrelations among all the judge's ratings in a group. The *u* was .443 for the trained observers and .508 for the untrained observers, thus indicating a slightly higher degree of agreement among the latter group. The significance of *u* for each group was determined, and in both cases it was found to be significant at better than the one per cent level of confidence.

The rank order for the trained group was in close agreement with the objectively counted number of misarticulated sounds made by the subjects. The correlation coefficients between the rank order obtained from this actual count of articulation errors and the judges' rankings were .983 for the clinicians (significant at better than the one per cent level of confidence) and .822 for the non-clinicians (significant at the four per cent level). Both groups agreed that the speaker with no errors was the least defective and that the speaker with five errors was the most defective.

There were many inconsistencies in ranking among both groups, as evidenced by a large number of rankings that were tied. A feature of the paired comparison technique is that inconsistencies of judgment do manifest themselves in tied rank orders. A greater percentage of the untrained observers than the trained observers showed no ties at all. Most of the

judges in both groups tied three or four voices.

This study suggests that trained and untrained observers would usually make similar comparisons of the severity of the speech of children with functional articulation defects. There are pitfalls in assuming from these data that lay persons can always judge defective articulation. As Backus (*1*) points out, the speech 'must be appropriate to the age level of the patient.' She also states several other factors that enter into judging defective speech: (1) Individuals who are accustomed to a low standard of speech will usually not notice defective speech unless it is practically unintelligible; (2) a great number of individuals do not recognize defective forms because they do not think in terms of such a possibility; and (3) parents and teachers get so used to hearing the child with defective speech that they are not conscious of any abnormality. Further support for this thinking is shown in the greater agreement between the ratings of the trained judges and the articulation error count than between the ratings of the untrained judges with this error count.

Summary and Conclusions

The purpose of this study was to investigate whether there was any difference in the ratings of severity given by trained and untrained observers to functional articulation defects. The voices of seven children with varying degrees of articulation difficulty were recorded and arranged on magnetic tape in a prearranged order for paired comparisons. The tape was played before two groups of judges, one group with no training in speech therapy and the other group with a great deal of training. The judges made their ratings on specially prepared sheets, and the following results were obtained:

1. The rank order correlation coefficient between the ratings assigned by the trained and untrained groups was significant at the four per cent level of confidence. That is, trained and untrained judges do not differ significantly in their evaluations of the severity of functional articulation defects.

2. Both the trained and untrained judges showed a significant amount of agreement within their respective groups in their rankings. The untrained observers were slightly more in agreement with themselves than were the trained observers.

3. There were many inconsistencies in ranking shown by members of both groups.

4. The correlation coefficient between the number of sounds misarticulated and the judges' rankings was significant at the four per cent level for the untrained judges and significant at better than the one per cent level for the trained judges.

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The Motor Proficiency Of Stutterers

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THIS STUDY was concerned with the performance of stutterers on the Oseretsky Tests of Motor Proficiency. Its chief purpose was to replicate, with certain modifications, a study reported by Helene Kopp (*13*).

The theory that stuttering is based on an organic predisposition of a neuromuscular nature has stimulated a large amount of research on the motor abilities of stutterers. Broadly viewed, this research has not had a conclusive outcome.

The majority of such studies have investigated various aspects of the stutterer's manual skill. Westphal (*24*) found stutterers equal to their controls in manual strength and steadiness. On tests of hand-eye coordination Anderson (*1*), Cross (7) and Westphal (*24*) found no differences between stutterers and non-stutterers. On the other hand, Bilto (*4*) found stutterers inferior to normal speakers on an 'eye-hand coordination test' requiring the bouncing of a ball within a three-foot circle, and Carlson (*6*) observed that stutterers tended to perform poorly on such Stanford-Binet items as folding a triangle, copying a diamond, and drawing designs from memory. In speed of repetitive manual movement stutterers were found inferior by Cross (7), West (*23*) and Rotter (*17*), while Strother and Kriegman (*21*), closely matching their subjects with respect to age, sex, handedness and skill at rhythm discrimination, found stutterers slightly though not significantly superior to non-stutterers. In speed of simultaneous movement of both hands, as measured by the Brown Spool Packer Test, Cross's selected right-handed normal speakers surpassed a group of stutterers who were unselected with respect to handedness. In the ability to move the hand regularly or rhythmically stutterers were found inferior by Blackburn (*5*), Hunsley (*10*) and Rotter (*17*), and comparable to their controls by Strother and Kriegman (*22*), Cross (7) and Wulff (*25*). Other studies of manual skills of stutterers involved more complex psychomotor tasks requiring rapid or accurate serial discriminations. Stutterers were reported to be inferior on such tasks by Bills (*3*), Eisenson and Pastel (*9*), Kelly (*11*) and Rotter (*17*). They did not differ significantly from comparable normal speakers in studies by Cross (7), Lightfoot (*14*), Simon (*19*) and Ross (*16*).

A second category of findings concerns the functioning of the stutterer's

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oral and related structures in non-speech activities. Palmer and Osborn (*15*) found stutterers and non-stutters equal in strength of tongue. In speed of repetitive movement of lips, tongue and jaw, stutterers were found slower than right-handed normal speakers by Cross (7), while Spriestersbach (*20*) observed no differences between his two groups, and Strother and Kriegman (*21*) found that stutterers were consistently though not significantly superior to non-stutterers matched for age, sex, handedness and rhythm discrimination ability. West (*23*) found stutterers inferior in combined rate of jaw and brow movement, but Spriestersbach's study (*20*) failed to confirm this either for brow rate separately or for the combined measure. Cross (7) found righthanded normal speakers distinctly superior to stutterers in rate of movement of the diaphragm. In the ability to move the tongue, jaw and lips rhythmically, stutterers were reported to be inferior by Blackburn (*5*) and Hunsley (10), but did not differ significantly from their controls in studies by Seth (*18*), Wulff (*25*), and Strother and Kriegman (*22*). Seth (*18*) and Hunsley (*10*) found stutterers inferior in producing rhythmic movements of the respiratory musculature.

Several studies have investigated the stutterer's skill in gross bodily activities. Arps (*2*) found stutterers poor in gymnastic exercises requiring rhythm and coordination, and Kiehn (*12*) found them slightly inferior in a test which involved carrying a full glass of water. Bilto (*4*) employed the Brace Motor Ability Tests, which were designed to measure strength, agility, balance and control. Bilto's stutterers scored somewhat below the test norms on the average. No normal speaking control group was used, but the stutterers were reported to have performed as well as a group of articulatory defectives. On Nielsen and Cozen's Jump and Reach Test, a test of strength, Bilto's stutterers scored slightly but apparently not significantly below the test norms. Finally, Kopp (*13*) found that stutterers were extremely deficient in general physical coordination as measured by the Oseretsky Tests of Motor Proficiency.

The large majority of these studies have shown either slight or no differences between stutterers and non-stutterers in motor ability. Kopp's findings are in marked contrast. Kopp administered the Oseretsky Tests to 50 stuttering children selected from classes of the Department of Speech Improvement of the New York City Board of Education and ranging in age from 6½ to 15 years. On the basis of Oseretsky's norms nearly all of these children were found retarded in motor development in amounts ranging from one year eleven months to nine years seven months. Fully 46 per cent were retarded by more than five years, falling into the category of performance which Oseretsky designates as 'motor idiot.' 'Severe retardation' (three to five years) was shown by 26 per cent, and 'motor deficiency' (one and a half to three years of retardation) by 20 per cent. Only three children were 'normal' and one 'superior.'

Kopp concluded that the findings 'revealed a marked disturbance of the motor function.' They were clearly of such magnitude as to command unusual interest, and pointed to the desirability of further examination of stutterers by means of the Oseretsky Tests.

The Oseretsky Tests

The Oseretsky Tests of Motor Proficiency were designed to establish an age level of motor development for children from 4 to 16 years of age. They were standardized on 5,000 Russian children and first published in Russia in 1923. Subsequently, they were translated into several languages, and in 1946 an English adaptation based on a Portuguese translation was sponsored and edited by Doll (*8*).

In basic organization the instrument is similar to the Stanford-Binet intelligence scales, consisting of tests increasing progressively in difficulty in accordance with age levels. Testing is begun at the child's chronological age level and proceeds 'downward' until the age level at which all test items are passed (basal age) is determined. Testing is then continued 'upward,' and terminates at the age level at which the child fails all items (ceiling). A value in months for the successful performance of each item above the basal age is added to the basal age to yield a 'motor' age. The discrepancy between the child's motor age and chronological age represents his motor retardation or acceleration.[1]

On each age level there are six subtests, each testing a distinct category of motor function, as follows:

1. *General static coordination.* This refers to general body balance. Example:

> To remain standing, eyes closed, for 15 seconds. The right (preferred) foot is placed before the left foot. The point of the left touches the back of the right heel, lying in a straight line. The arms hang beside the body, palms of the hands turned in. Moving the feet or moving the body to maintain balance is not permitted.

2. *Dynamic coordination of the hands.* Example:

> To touch the point of the nose alternately with the right and left index fingers, eyes closed.

3. *General dynamic coordination.* Example:

> To jump up and down in the same place, keeping the feet together, seven or eight times in five seconds. The knees should flex slightly.

4. *Motor speed.* The emphasis here is on the successful performance of the test item within a given time. Example:

> To put 20 coins in a box, spending no more than 15 seconds at this task (using only one hand).

5. *Simultaneous voluntary movements.* These items test the ability to coordinate rhythmical movements of both limbs. Example:

> To describe circles in the air with the index fingers of both hands for 10 seconds, with the arms extended horizontally at the sides. In the right hand the direction of the movement is clockwise, in the left hand counter-clockwise. The test is failed if arms are moved, and if the circles are badly formed or of different diameters.

6. *Synkinesia.* These items test for the appearance of extraneous movements in the performance of an activity. Example:

> To knit the eyebrows. The test is failed if the subject tilts the head backwards, wrinkles the nose, opens the mouth, etc.

Procedure

The subjects were 30 children from 4 to 10 years of age. They consisted of 15 stutterers and 15 non-stutterers matched for age, sex and laterality. No subject differed in age from his control by more than half a year. The average difference in age was 1.2 months, the stutterers being younger than the non-stutterers by that amount. Twelve pairs of subjects were male and three were female. Ten pairs were right-sided, four left-sided,

[1] Doll (*8*) states, 'We have not yet encountered any data on normative standardization, reliability, or differential validation.'

TABLE 1. Mean performance of 15 stutterers and 15 matched controls on the six sub-tests of the Oseretsky Tests of Motor Proficiency and on the tests as a whole. Values represent months of motor age.

	General Static	*Dynamic Manual*	*General Dynamic*	*Speed*	*Simult. Movement*	*Synkinesia*	*Total Test*
Stutterers	16.3	15.7	16.4	12.7	14.1	16.3	91.6
Controls	14.3	14.5	14.6	12.0	14.5	14.3	84.3
Mean Diff.	2.0	1.2	1.8	0.7	0.4	2.0	7.3
S. E. $_{diff}$	1.15	0.58	1.02	1.02	0.74	1.05	4.37
t*	1.74	2.07	1.76	0.69	0.54	1.93	1.67

* A minimum value of 2.145 is required for significance at the 5% level.

and one of mixed laterality.[2] The stutterers were obtained from speech clinics at Brooklyn College, Long Island University, and the Jewish Hospital of Brooklyn. The normal speakers were obtained from the same general community, and the two groups represented approximately the same socio-economic background. According to information received from the parents, none of the subjects had at any time been treated for neurological disorders.

Each subject was tested individually. The tests were administered jointly by two examiners, the tasks of giving instructions, timing tests, evaluating performance, and recording successes and failures being divided between them. All subjects were tested by the same examiners, and the same testing room was used throughout the study. Every test item was fully explained and illustrated by demonstration. The child was then asked to describe or explain what he was about to do. When it was clear that the child understood what was expected, he was asked to perform the activity. If the child failed on the first attempt he was given additional trials within the limits allowed by the test. The time intervals for rest between each item or repetition of an item were faithfully observed. In these and other respects the instructions for administering and scoring the tests were carefully adhered to.

Results

The results of the experiment are summarized in Table 1. The principal findings are a mean motor age of 91.6 months for the stutterers and 84.3 months for the controls on the Oseretsky Tests as a whole. The average stutterer was therefore 7.3 months in advance of his control in motor age, despite the fact that he was 1.2 months younger than his control due to discrepancies in matching. This difference, however, is not statistically significant, t being 1.67. A mean difference as large as 7.3 months would be obtained by chance alone more frequently than 10 per cent of the time from similar samples of the same size. There is consequently not sufficient basis for rejecting the hypothesis that the two groups of subjects

[2]Each subject was asked to use a pencil, use a pair of scissors, bounce a ball, hop on one foot for a short distance, kick a ball, pick up small objects placed directly in front of him and hand them to the examiner, and pick up and place a wrist watch to his ear. The side used consistently in performing these activities was regarded as the preferred side for purposes of matching.

were selected from the same population so far as motor ability as measured by the Oseretsky Tests is concerned.

Essentially the same results were obtained for individual sub-tests. Table 1 shows that the stutterers surpassed the non-stutterers on all sub-tests except *simultaneous movements*. None of the differences was statistically significant.

When the stutterers' performance is judged on the basis of Oseretsky's norms by comparing motor with chronological age they show a mean retardation of 3.5 months. Four stutterers were 'moderately' retarded (one and a half to three years), one was 'slightly' retarded (one to one and a half years), and 10 had normal or superior motor development. The average non-stutterer was retarded 12.0 months on the basis of the Oseretsky norms. Four non-stutterers were 'moderately' retarded, four 'slightly' retarded, and seven normal or superior.[3]

Discussion

The results of this study conflict sharply with those of Kopp (*13*) and agree more closely with Bilto's findings (*4*) regarding the general physical coordination of stutterers. The disparity between Kopp's results and those reported here is difficult to account for. A few factors which may have contributed to it may be mentioned.

First, this study employed Doll's English adaptation (*8*) of the Oseretsky Tests which was based on a recent Portuguese formulation, while Kopp appears to have used an earlier adaptation or the original. Doll (*8*) finds that the Portuguese and Russian scales correspond well, but observes that 'it is inevitable that in such successive translations some textual errors of detailed formulation might occur in spite of all precautions.' Furthermore, various minor changes were made deliberately in both the Portuguese and English adaptations (*8*). As a case in point, Doll advises the examiner to supplement verbal directions with demonstration, but states that the test as translated from the Portuguese does not make clear to what extent the child may be assisted in this manner. In following Doll's manual the experimenters may have used procedures which differed in this and other respects from those of Kopp.

The procedures used in administering the tests differed for another reason. It will be recalled that testing is ordinarily done on all age levels from the child's basal to his ceiling, and is confined to these levels. Kopp states that, with Oseretsky's approval, she altered this technique, beginning all tests at the four-year level regardless of the child's age and proceeding to successively higher levels until a ceiling was reached.

Finally, the difference in results may have been due, in part, to disagreement in the interpretation of scoring instructions, which sometimes allow wide latitude to the examiner's discretion. Doll (*8*) notes that the scoring standards 'seem often rather subjective and sometimes ambiguous,' and suggests that modifications in the test are needed 'in order to achieve greater clarity and objectivity in administration and scoring.'

Whatever the reasons for the conflict between the two studies, they apply, of course, to a disagreement about stutterers' performance as evalu-

[3]The names for these classifications accord with Doll's usage (*8*), and differ somewhat from those employed by Kopp.

ated with reference to Oseretsky's norms. The finding that the stutterers examined in the study compared favorably with matched controls would appear to be substantial evidence that they were normal as a group in the abilities tested by the Oseretsky scale. This is of interest in view of what it would seem to imply about the adequacy of the stutterer's neuromuscular organization. While little agreement is to be found regarding the precise description of the organic weakness involved, many present day constitutional theories of stuttering have in common the concept that it results from a disturbance of the smooth motor functioning of the oral structures. A motor disturbance affecting the apparatus of speech might reasonably be expected to affect the functioning of other parts of the skeletal musculature as well. Such a generalized deficiency of motor coordination was not found in this study. The results suggest that if a general lack of neuromuscular integration underlies stuttering it occurs in a form which is not demonstrable by means of the Oseretsky Tests.

Summary

The Oseretsky Tests of Motor Proficiency were administered to 15 stuttering and 15 normal speaking children matched for age, sex and laterality. The stutterers were slightly but not significantly superior to their controls, and were essentially normal as a group on the basis of the test norms.

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Emotional Involvements In Some Forms Of Mutism

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AMONG THE large numbers of children referred to the child psychiatrist because of indistinct speech or defective articulation, there are a few above the age of three or four years whose speech development is almost nil. It is recognized that after a child has developed comprehension of speech at the age of one, his verbal output is still very limited. He understands the content of the spoken word, but he is not able to use the meaning and the emotional value of the word for verbal communication. The child is a 'hearing mute' (*23*). In some children the development of the complicated mechanism of speech is delayed; some retarded children and those with defective hearing may never be able to learn this function. The delay in speech development has been discussed fully by several authorities (*19*, *15*, *9*, *1*) who report that children with delayed speech, with or without help of a speech therapist, usually develop adequate speech by the age of six years at the latest.

There is, however, a small number of children who hear and understand speech, show no clinical evidence of organic involvement, yet do not speak and are most resistant to intensive speech therapy. Their responses in all areas other than speech are adequate for their age and intelligence and show no evidence of such conditions as alexia, apraxia, or agnosia. In the older literature, these children were frequently referred to as 'aphasic,' and a large amount of research has been done in an attempt to localize the exact area of the brain that could account for the condition. In recent studies there has been much discussion and controversy regarding the use of the diagnosis of congenital aphasia, congenital word deafness, auditory imperception, and other possible conditions (*4*, *13*, *3*). Without denying the possibility of an organic etiology in the children of our study, we would like to discuss various other factors which seem to us also to play a role.

The literature of emotional problems in mute children refers to cases of 'voluntary aphasia' (*10*, *5*) and 'voluntary mutism' (7, 2). These children were described as having taken refuge in mutism from a threatening situation. Tramer (*20*, *21*) and Salfield (*17*) discussed cases of 'elective mutism,' the mutism being directed only toward certain people. In the last two years two Swiss authors,

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Weber (*24*) and Misch (*11*), have reported cases of children diagnosed as elective mutism with similar histories and etiologies. The families were very withdrawn, having little contact with the outside. Most of the parents were thought to be psychotic or neurotic. The children were of low intelligence and adjusted poorly to strangers. Some of the children described in these papers impressed us as possibly being incipient schizophrenics. Mutism may also be a sign of 'early infantile autism' (*8*). The personality of mute children is described as hypersensitive, inhibited, and negativistic. Since negativism leads to social nonconformity, mutism is the most impressive form of it (*16*), but often the children are regarded as neuropathic or hysterical (*2, 6*). Nadoleczny (*12*) thought that these children may have 'a weak speech impulse,' or are 'speech-shy.' Treitel (*22*) felt that the cause of mutism lies in factors which constitute the symbolic content of the language; it was much easier for the children to imitate words than to speak voluntarily. Children with a speech defect can become suddenly mute after they have been teased by playmates (*6*) but this mutism is temporary, and the children are willing to talk again as soon as the disturbing factor is eliminated. Spieler (*18*) collected 50 cases of mutism in children from the European literature. He took the position that so-called 'voluntary mutism' is quite involuntary and that in depressive situations sensitive children can become mute or partially mute. Spieler suggested the use of the term 'thymogenic mutism.'

Orton (*14*) gave another reason for the interruption in the speech development:

> In a few of our cases, a history has been obtained of an abrupt onset of mutism after speech had started to develop, coinciding in time with efforts to train the child away from the preferred left hand. In one small boy, such training efforts were accompanied by the development of a jargon which could not be understood at all, but which cleared up strikingly as soon as he was allowed to use the left hand freely again.

The case described by Werner (*25*) is in many respects similar to our cases. A girl of five had never uttered a word and had 'developed such a negativism toward speech that any attempt to encourage talking caused her to hide her head, draw off to herself, and run away.' When therapy was started, she made her first sounds imitating animal noises. Any attempt to put speech an a personal basis met with instant withdrawal. The child was ignored and neglected by the mother, except for minimal attention to her physical needs. The mother was silent most of the day. During the treatment the child reflected her mother's more serious state of mental disturbance; 'bad days' in talking corresponded with 'bad days' at home. When the child started to say a few words in kindergarten, she became 'naughty' at home. It was felt that this indicated a release from her repression and withdrawal, which could be indicated as a healthy sign of development.

Cases

Linda H. was first seen in our Clinic on January 23, 1952, at the age of 4 years, 4 months. The maternal aunt had made the appointment and had brought the child because Mrs. H. had recently delivered a third child. Mrs. H. had had a very unstable home life. She was the youngest of four children and was in constant warfare with her strict father. She had two years of high school and business college. She ran away from home at

the age of 19 to marry a man with a 'very bad reputation.' Linda's father is said to be unable to read and write. Despite a good salary, he had never supported his quickly growing family. He lost his house and car within a short time because he did not pay his bills. He drank a great deal, and when he came home he beat Linda to the extent that she had bruises on her face. Mrs. H. left her husband several times, especially during pregnancies. At the time of the interviews at the clinic she was staying with her parents again and intended to go to the court to get support from her husband for her three children. It seemed that she had made definite plans to separate from him, but three weeks later, Mrs. H. suddenly joined him again without knowing where they and the children were going to live.

Linda's birth was spontaneous and normal. She was breast fed for three months and then adjusted to the bottle readily. She sat up at 6 months and walked at 16 months. There had been no signs of rickets. She started to say 'Mommy' and 'Daddy' at about 1 year, but after some months she dropped this completely and did not say anything until she was nearly four. Her mother never encouraged her to talk and their form of communication was by gestures and pantomime. When Linda went to stay with her aunt at three and a half, she acquired the words 'good-night, yeah, no, apple, horsie, Margie' and the statement 'I don't know.' Once, when her aunt punished her, she said suddenly 'I don't love you.' The aunt had a daughter of the same age as Linda, but instead of the cousin influencing Linda, she developed Linda's sign language. When Linda returned to her mother and grandparents after a stay with her aunt for half a year, she had temper tantrums and cried at night. She enjoyed playing with her little sister, Margaret, who was two and a half and whose language development was similar to that of Linda.

Linda was a most appealing, pretty girl who came with the examiner quite easily. She was interested in the toys which were offered and impressed the examiner as having adequate comprehension. She followed simple commands, could identify objects by pointing and would shake her head accordingly to questions requiring a yes or no answer. When asked to name various objects, she shook her head or said 'I don't know.' She also said 'Yes' and 'No' several times and mumbled a few words. She was very affectionate and enjoyed being held. During the play with the doctor she became quite demanding but was able to tolerate not having her wishes fulfilled. Her relationship with the psychologist and speech therapist was also friendly. She was able to do most of the non-verbal tests on the Binet at the fourth and fifth year levels and showed evidence of good intelligence. She verbally identified 'dog' and uttered something that sounded like 'pussy cat.' Her general behavior was lacking in spontaneity and she quickly dropped her play activity, waiting for outside stimulation. While playing with a ball, she was heard to say 'Where is the ball?' She uttered several short sentences which were completely unintelligible. A careful audiological examination indicated normal hearing and there was no doubt as to her ability to comprehend and respond to all verbal requests.

When Linda was accompanied by her mother, she did not want to leave her. She seemed to prefer sitting on her mother's lap to accompanying the

therapist. She painted one sheet of paper after another with bright blue or a mixture of several colors without making any attempt to paint or draw a form. While playing with a boy in the clinic (a severe stutterer), she burst into a loud, happy laughter every time she hit one of the dolls with a play gun.

After two months of play therapy, Linda started to say a few short sentences. When she got her dress dirty, she cleaned it up eagerly, trying to say 'You should not do this' and 'You are a bad girl.' These sentences probably were reminiscent of her stay with her aunt who had been quite rigid in training the child and had made her 'orderly.' One day, when Linda's father was mentioned, she suddenly became very anxious and left the room to look for her mother.

After Mrs. H. had gone back to her husband, she kept her appointments very irregularly, and after three months of therapy did not return. She visited the clinic once again to inquire about the possibility of sterilization. A subsequent visit at home was made: The family lived in a one-room bungalow off the main road, and the two girls were found playing in the mud unsupervised. The mother had accepted a night job and the children were left alone with a young baby sitter. Linda has made no further progress in her speech development since she left the Clinic.

Charles B. was first brought to the Clinic by his grandmother at the age of 4 years, 6 months. Charles also came from a broken home. His mother had graduated from junior high school, had worked as a filing clerk and had married Mr. B. after acquaintanceship of one month when she was 16 years old. The maternal grandmother reported that Mrs. B.'s articulation was defective, particularly when she was emotionally upset. Charles' father was described as being of limited intelligence. He was in the United States Navy when he married his wife at the age of 19. After his marriage he changed jobs often and returned to the Navy when Charles was two; he was frequently home on leave. The family often had insufficient food, were evicted from their apartment due to the father's lack of responsibility. The maternal grandparents often had to aid in their support. When Charles was about three, Mrs. B. separated from her husband and returned to her parents.

Charles was born in a hospital after an uneventful pregnancy. Labor lasted 11 hours and was considered to be fairly easy. His birth weight was eight and a half pounds. He was bottle fed and took the bottle well. He cried frequently and was a poor sleeper. He walked alone at 11 months and started to say 'mama' and 'ah, ah, ah' when he was under one year of age but later showed no further speech development. He had a good comprehension and followed instructions adequately. He had a deep fear of his father who had punished him frequently to the point that neighbors complained of his cruelty to the child. When his father came home, Charles would not move from his chair. When he had nightmares, his father shouted at him and hit him for having them. After the father had left the family, Charles demanded the light to be put on whenever he awoke at night.

At the age of two and a half Charles had a fall down the stairs from the second to the first floor. He was unconscious for about two hours and stayed in the hospital for eight days for observation. No major injury or neurological disturbance was found,

and he was well after his return home. There was no change observed in his speech or behavior after the accident. At the age of three, he had several attacks of high fever, sometimes with convulsions. After a tonsillectomy and adenoidectomy at three and a half, he had no further fever attacks.

At the first interview at our Clinic in March 1951, Charles appeared to be a warm, friendly little boy whose attempt at speech consisted of a few garbled sounds. Although he seemed quite at ease with the examiner, he had a rather shy and strained manner of raising his fist to his eyes as though embarrassed. Whenever speech was introduced, he immediately withdrew from the situation. He was interested in play, but did not indulge in aggressive forms of activity. On the nonverbal tests he achieved a mental age of four years, ten months and an I.Q. of 107. He had knowledge of colors and was able to state his age by holding up four fingers. He had an ear, nose and throat examination which was entirely negative. Hearing tests showed a normal threshold for pure tones. An EEG was normal for his age, awake and asleep.

Charles had previously been treated in another psychiatric clinic for one year with no apparent results in his speech development. At first no formal psychotherapy was attempted in our Clinic and the treatment was directed by the speech therapist but, unfortunately, the appointments were not kept regularly. Efforts at speech education were met with great dissatisfaction and hostility. Whenever formal speech training was introduced, he immediately withdrew from the situation. His nursery teacher became interested in 'Buddy' and took him into her home during the summer months. There he started to say a few words, but the teacher felt that he did not respond to her efforts.

After an interval of several months, Charles returned to our Clinic in March 1952. He was now going to a regular kindergarten and had made a good adjustment. At home he was still having nightmares and insisted on a light at night. His grandmother had taken over his care completely. She stated that Charles was able to go to self-service stores and purchase as many as six different items. The grandmother had always overprotected Charles and had opposed strongly his being sent to a boarding school. At this time, when Charles was alone with the therapist, he spoke a few words, like 'Bobby' (his boyfriend), 'cook,' 'ami' (grandmother), and 'Mama.' 'I he huh' meant 'I am hungry.' The only clear sentence was 'I don't know.' When he was excited he shouted single vowels. When he was presented at a staff conference, he came into the room willingly and played with the little dolls. But when he was asked to repeat one easy expression like 'good-bye,' he left the room panic-stricken. After three months of therapy he was willing to repeat several simple words upon request and seemed pleased when reassured that he spoke them well. When he was asked to repeat them a second time, however, his attitude changed, he rejected the command and expressed his hostility by being mute for the rest of the interview.

It is interesting that in both of these cases the only clear statement either child made was 'I don't know.'

Chairley T., age 9, and her brother, *Lawrence*, age 6, were brought to our Clinic for the first time in 1941 with the complaint that neither child had learned to speak. Chairley was born at home; the delivery was spontaneous

and normal. She was breast fed for three months, sat alone at six months, and walked under one year of age. At the age of two, Chairley was supposed to have spoken a few words but, following a fall down the steps which resulted in unconsciousness for a period of three hours, she became mute. Chairley's fall occurred two days before the birth of Lawrence. Lawrence was also born at home under the care of a midwife. The birth was without complications. He took the breast and bottle well, sat at four months, and walked under one year of age. He was never known to speak.

Mrs. T. developed a 'nervous breakdown' after Chairley's accident and the birth of Lawrence and was ill for six months. Mr. T. was a 'shell shock' victim of World War I who developed muteness while in the service after he was gassed. His speech returned a few months later upon arrival in the States, after a 'throat operation.' He was described as having 'a quick temper and a foul mouth.' He was a tyrant at home and, when under the influence of liquor, he demanded absolute silence. The parents regarded the children's mutism as a result of stubbornness and attempted to treat the problem accordingly, using techniques such as physical punishment, starvation, and seclusion, all without avail.

In the initial interview it was difficult to separate the children from their mother and more difficult to separate the children from each other. It was not easy to test the children psychometrically but, from their results on a few performance tests, they were considered as possibly being within normal limits. The audiologic, physical, and neurological examinations were normal in both children. It was decided to focus the therapeutic efforts on Chairley. During treatment she was friendly and cooperative while engaging in play activities but, as soon as a direct attempt was made at altering her communication pattern, she instantly changed and withdrew from the setting. Her reaction to an attempted intrusion on her mutism always followed the same pattern —an immediate withdrawal. After a number of such experiences, in view of home conditions, Chairley was sent to a convalescent home for children. When visited by the speech therapist in the new environment, she followed the same pattern: friendliness until she suspected a speech motive and then withdrawal. She was willing to attempt to reproduce some sounds in a whisper for the superintendent but, as soon as she heard footsteps in the hall, her efforts at speech ceased. Once, while getting into a tub of water, she was known to yell, 'It is too hot.'

After staying at this place for six months, it was decided to send Chairley and Lawrence to the school for the deaf. Both children were seen daily by a speech therapist there for many years but they were more interested in using the manual language which they quickly acquired from observation of other children, than in the acquisition or use of speech. Lawrence, however, did finally use speech for communication purposes though his articulation was defective and his vocabulary limited. His output of spontaneous speech was sporadic and he used words sparingly. Chairley's speech development was very slow and poor. The very little speech she did indulge in usually consisted of one- or two-word sentences. Her oral vocabulary was very limited and her articulation was defective. It was noted that both children's speech de-

teriorated when they returned home on their vacations. They accomplished little at school and were considered as being severely retarded by their teachers. They had few interests. Chairley, at the age of 20, occupied herself by taking care of young children, and Lawrence showed marked apathy toward all activities. Both remained attached to each other and it was interesting to learn that they became upset upon receiving mail from home.

When Chairley was 20 years old and Lawrence 18, they were asked to return to the Clinic for reexamination. We were impressed with Chairley's change of appearance from an alert, attractive young girl to an obese, dull-looking, inhibited adult, lacking in spontaneity and animation. Our first impression was that she had deteriorated markedly. Her replies to questions were usually one-word answers and usually not understandable. When she was asked to write her answer, however, it was done quickly and fluently. For instance, when asked what she was doing at school, she wrote, 'I like to sew on my dress which I am making for summer vacation.'

The results of the psychometric examinations administered at this time were extremely interesting. Because of Chairley's lack of speech, the Grace Arthur Scale was administered. On the Knox Cubes she displayed a good immediate recall and attention span. On the formboard she showed good form perception and manual dexterity. She also performed well in the Healy picture completion test. Her lowest performance was on the Kohs Block Design, indicating a disturbance of her visual-motor organization. She approached the test situation with ease and applied herself well for the most part. There was a tendency toward passivity, lack of initiative and lack of persistent effort. She attained a mental age of 16 years, 2 months. On the Wechsler Bellevue Scale, Form 1, Chairley showed a wide scatter, with her poorest performance on the picture completion, block design, and digit symbol tests. On this examination, she attained an I.Q. of 87. The EEG showed a fairly well-defined dominant frequency of 9 per second in the occipital leads, a large amount of 7 per second activity for the most part in all areas and, in addition, a small amount of low voltage fast activity in the frontal and prefrontal leads. In the sleep record, no specific abnormalities were found.

Lawrence performed at a higher level psychometrically. On the Grace Arthur Scale, there was an interesting similarity in all tests with the exception of the Knox Cubes, where his performance was not quite as good as Chairley's. His over-all performance was considered higher both from a qualitative point of view and in that he was more persistent. He also tested poorly in the Kohs Block Design, possibly indicating a visual-motor disorganization. On this examination, he attained a mental age of 15 years, 11 months. On the Wechsler Bellevue Scale, Form 1, he showed a wide scatter with the poorest performance on digit symbols, and picture completion tests. It was interesting that on the block design he performed considerably better than on the Kohs Blocks given in the Grace Arthur Scale. On this examination, he achieved an I.Q. of 106.

His EEG showed a clear dominant frequency of 10 per second in the occipital leads, but appeared at somewhat higher voltage on the right than on the left. There was, in the background, a moderate amount of slow-

ing at low voltage down to 2 per second in the central areas. No abnormalities were seen at sleep. On hyperventilation, there was a gradual but very mild increase in the voltage of the alpha rhythm. In addition, in the left occipital area, there appeared a few sharp waves.

Since the findings in these two siblings are in some respects different from the first two cases, we would like to discuss them separately.

With such evidence as an abnormal EEG, a scatter and unevenness in mental tests, unusual speech development and behavior, a diagnosis of organic brain involvement is suggested, but the emotional and environmental factors must also be taken into consideration in attempting to understand the over-all situation. Chairley's EEG was interpreted as being at borderline of normality. Slow activity as seen in Lawrence's EEG has been reported in retarded children and in epileptics, but they are also seen in patients with emotional disturbance. It is therefore not possible to make a definite diagnosis of brain damage on the findings of the EEG alone. The question of what effect their 11 years in the school for the deaf had upon their attitudes and personalities is difficult to determine. The only intimate relationship they had with normal hearing and speaking people was during the summer months at home where the disturbing factors had been so damaging to their first years of life. Chairley's inability to make herself understood has kept her more and more apart from normal people so that now she feels comfortable only with very young children. Although Lawrence has made a better adjustment in speech, he also made a very poor vocational, social, and educational adjustment. The attempts made at helping them to develop speech were always met with resistance and hostility.

Conclusion

The personal history of our children was usually as follows: Following a normal birth, the physical development of the children was normal. There was no evidence of any birth injury or severe illness in early infancy. The children began to babble at the usual age and spoke such words as 'Mama' or 'Daddy' and a few other words after one year. At this point their speech development was arrested and the children became, for all practical purposes, mute. Although two of the mothers reported that their children had suffered from a fall coinciding with the onset of mutism and were unconscious for a while, there was no evidence of a fractured skull. They showed no other neurological abnormalities after the accident. It is important to remember that during this period the children had also suffered from marked emotional disturbances which interfered to a great extent with their normal development.

It is impressive that all these children came from severely disturbed home situations. Their infancy and early childhood lacked any semblance of emotional and physical security. The fathers had poor work records and made poor vocational adjustments, and the families were always economically insecure. All the fathers were addicted to alcohol and, when intoxicated, threatened or even beat the children to the point that they were extremely afraid of them. In one of the families the children were not allowed to make any noise when the father was in a 'bad mood.' Two of the children had shown such signs of physical punishment that they had to

be separated from their fathers. The mothers were unable to cope with the situation, being too involved with their own problems. They usually took care of the material needs of the children, whose emotional needs were totally neglected. The children were unable to develop a sense of trust in them. The family life was full of danger and insecurity. The diets and eating habits were poor, toilet habits were not established at four or five. In general, the children were severely neglected.

The personalities and behavior of the children showed many similar characteristics. With an adequate ability to hear, to comprehend the spoken word, to follow verbal demands without hesitation, they resorted to a peculiar sign language and pantomime in an attempt to communicate. This means of communication satisfied their needs as they related to their mothers. In their relationship with their siblings and playmates, the children managed without the use of spoken words, and expected their expressive sign language to be understood. Frequently their contemporaries have learned to communicate with them through manual techniques. Under great emotional stress, however, the children in this study were reported to utter words or short, organized sentences. These few words were spoken clearly and intelligibly. For the most part the spoken words expressed a rejection or a wish. When excited, they uttered sounds as 'huh' or 'ah.' When they were not understood on these occasions, they became very upset but did not try to repeat the sounds and remained mute.

In a friendly, accepting atmosphere the children related quite easily to the therapist. Their behavior was friendly and lively. During the play situation they were not withdrawn and seemed to enjoy the social relationship on a non-verbal level. They liked to play with other children but, when left to themselves, they lost interest in play activity. There was a lack of initiative and spontaneity. They gave the impression of being sensitive and touchy children. It was difficult to develop an intimate relationship with them and the therapist felt that he was usually kept at a distance. The children always seemed to be defensive, as if they did not trust people.

At the initial examination these children seemed to have adequate intellectual endowment on a non-verbal level as indicated by performance tests. They tested poorly in tests which required visual-motor organization. The physical and neurological examinations were without abnormal findings; the EEGs were not grossly abnormal. All children had a careful hearing test, which showed no hearing impairment and gave evidence that the children could comprehend speech without difficulty.

Whenever the children were asked to attempt to reproduce a word or a sound, their open, friendly manner suddenly turned into bewilderment; they tried to escape from the situation by shying away or leaving the room as if in a panic. The children in this study demonstrated this negativism and resistance only when the therapist tried to change their means of communication. They behaved as though they had a need to remain mute. They overtly resisted any direct or indirect program of speech therapy. On occasion, when assured there was no one within listening range, one of the patients would attempt a few sounds or words. These rare intervals would be interrupted when footsteps were heard in the corridor or if someone

should enter the room. In a few instances a patient would be willing to imitate sounds in a whisper but after a few such attempts refused to continue. Various approaches and techniques were used in an attempt to initiate oral communication but with very little success. The whole idea of developing speech was a concept that they could not or were not able to accept. If the therapist attempted to force the issue, the patient reacted in a hurt manner and refused to continue with the interview.

Since projective testing methods were also unproductive, it was difficult to obtain direct insight into their emotional problems. It was clear, however, that these children were severely disturbed emotionally. It would seem as if they had developed a defense mechanism consisting of mutism as a means of avoiding the difficult environment. They appeared to have erected a barrier to protect themselves from the intrusion of a hostile, threatening world. This mechanism was most impressive when, during excitement, the child suddenly broke through the barrier and verbally expressed a short, clear sentence. Otherwise, sign language was substituted for speech.

In discussing therapeutic resistance of children with defective speech, Wood (*26*) reported: 'Speech is in great part a means for contact; when contact brings eventual inner pain, why go after it?' Salfield (*17*) believed that elective mutism is a protective mechanism toward a hostile-rejecting environment; the children should not be treated but the environment should be changed. Froeschels (*5*) thought that voluntary acts are those which require a definite specific mental adjustment and continue only under that condition. Our children have obviously never adjusted to the situations in which they were living.

We consider the children discussed in this study as having a rare disturbance. The question arises, however, whether the etiological factors in other cases presenting language and articulation problems of a lesser degree are not similar in nature to the ones we have discussed.

Summary

Four case studies have been reported of children who were brought to our clinic with the complaint of muteness or relative muteness. The outstanding difference between these cases and other cases of muteness discussed in the literature is the strong hostility and resistance these children presented to speech therapy. Without ruling out the possibility of an organic brain damage of unknown origin, we have emphasized the emotional and environmental factors which we believe contributed to their problem. It is our opinion that more investigation into the dynamics of these cases is necessary and that therapy, particularly at the onset, should be on a psychotherapeutic level.

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Bibliography On Esophageal Speech

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IN RECENT YEARS increasing interest has been shown in esophageal speech. This bibliography attempts two things: (1) To provide a very complete list of references, and (2) to restrict these references to articles containing information which is directly concerned with the process of esophageal speech.

All articles listed were not available for examination. These were either included simply on the judgment of the author or by implications of the title.

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86. Voorhoeve, N. Stomach as vicarious air chamber for producing speech after extirpation of larynx. *Acta Radiol.*, 7, 1926, 587-594.
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Graduate Theses In Speech And Hearing Disorders — 1952

Franklin H. Knower

THERE WERE 160 master's and 34 doctor's degrees reported in the field of speech and hearing disorders for the calendar year of 1952. These degrees were granted by 54 graduate schools. The names of these schools are listed alphabetically together with designations of the types of degrees granted, the names of the recipients of degrees, and the titles of their theses. An index based on the theses numbers is presented. Doctorate thesis title numbers are indicated in this index by placing an asterisk after the number.

Titles

University of Alabama

M.A. Theses

1. Curry, Phillip G. The study of speech in interpersonal relationships: 9. Techniques for measuring duration of audible behavior in sound motion pictures.
2. Harwood, Arlette B. The study of speech in interpersonal relationships: 8. Techniques for measuring time relationships in tape-recorded conversations.
3. Matis, Edward Eugene. An analysis of hearing acuity in two public schools.
4. Stafford, Patricia. The study of speech in interpersonal relationships: 10. Techniques for analyzing group conversations.

Ball State Teachers College

M.A. Theses

5. Baker, Marvin G. A study of the pronunciation of names of places and people in Howard County.
6. Mehnert, Ruth. Attitudes of elementary teachers toward infantile perseveration.
7. McClure, Helen Sonafrank. A study of the existing relationship between articulatory speech defects and related disabilities including reading.
8. Reed, Cervis S. The attitude of parents toward the development of speech in their children.
9. Twining, J. Dean. Educational achievement and non-verbal intelligence among deaf school children.

Boston University

M.Ed. Theses

10. Dumbleton, Charles F. An analysis of the relationships between speech and reading abilities of four hundred and twenty-five first grade children.
11. Fulton, Lawrence E. An analysis of the relationships between speech and reading abilities of four hundred and twenty-five first grade children.
12. Herman, Kenneth. Analysis of literature on psychological factors in the etiology of delayed speech, with emphasis on child-parent relationships.
13. Kelley, Mary Jane. The construction of a paragraph type voice and articulation test for intermediate grades.
14. Leary, Mary E. An analysis of the relationships between speech and reading abilities of four hundred and twenty-five first grade children.
15. Moran, Marion C. Suggested hearing conservation program for a public school of 13,000 pupils.
16. Moreau, Leonard Joseph. Analysis of attitudes among classroom teachers toward a child with a speech handicap.
17. Nakashian, Phyllis M. An analysis of the relationships between speech and reading abilities of four hundred and twenty-five first grade children.
18. Simmerman, Amy-Jean. An analysis of the relationships between speech and

Franklin H. Knower (Ph.D., Minnesota, 1933) is Professor of Speech, Ohio State University.

reading abilities of four hundred and twenty-five first grade children.

19. Taborn, Marion Elizabeth. An analysis of children's poetry for material suitable for use in speech correction and speech improvement in the elementary grades.
20. Tikosen, Grace. An analysis of the effectiveness of a voice improvement program in a third grade class.
21. Wells, Esther M. The construction of a paragraph type articulation test.
22. Wise, Pauline K. An analysis of the relationships between speech and reading abilities of four hundred and twenty-five first grade children.

Bowling Green State University

M.A. Theses

23. Arnold, F. W. A guide for the evaluation and selection of equipment and materials for use by the public school speech and hearing therapist.
24. Blalock, N. V. A review of the available literature on the psychological testing of the brain-injured child.
25. Ruland, D. S. Integrating techniques of speech therapy employed in the habilitation of the cerebral palsied child.
26. Smith, W. E. A comparison of the responses of stutterers and non-stutterers in a college population on the Rotter Incomplete Sentences blank.

Bradley University

M.A. Thesis

27. Clopper, Paul. Group therapy for stutterers—an experimental thesis.

Brigham Young University

M.A. Thesis

28. Davidson, G. Don. The construction of an instrument for measuring the reported attitude and effect-on-values concept of the stutterer and others relative to their speech characteristics.

Brooklyn College

M.A. Theses

29. Adler, Seymour. Clang associations in aphasia.
30. Bloodstein, Annette. A study of stutterers' interpretations of listeners' facial reactions to stuttered speech.
31. Jaeger, William. A study of parental standards of childhood fluency.
32. Markwitz, Adele. Hearing problems in cerebral palsied children.
33. Meltzer, Flora. Sensitivity of adults to non-fluency of speech.
34. Nober, Earl Harris. Professionalism and commercialism in the sale of hearing aids.
35. Robbins, Myra. Word associations in aphasia.
36. Tureen, Jack. A study of parental standards of childhood fluency.

Catholic University

M.A. Theses

37. Behringer, Margaret E. Incidents of speech defects found among children in the first, fifth, and eighth grades of the Washington, D. C., parochial schools.
38. Shea, Patricia A. The use of drugs in the speech training of the cerebral palsied child.

University of Colorado

M.A. Theses

39. Holzberger, Janet. Development of consonant articulation and discrimination in the speech of kindergarten children.
40. Jackson, Elnora. A survey of the incidence and types of speech defects in grades 4, 5, 6, and 8, of the Booker T. Washington School, Wichita Falls, Texas.

Cornell University

M.A. Thesis

41. Bernitz, Joan Evelyn Goodman. Variations and consistencies in the pronunciation patterns of Alabama English.

Denver University

M.A. Theses

42. Hanauer, Kate N. An experimental study using the marble board test as a tool for diagnosing brain injury in mentally retarded children.
43. Parlova, Frederic O. Group approach to the learning of a complex motor skill.

Ph.D. Theses

44. Iverson, Norman E. A descriptive study of some personality relationships underlying a range of speaker confidence, as determined by the Thematic Apperception Test.
45. Stromer, Walter Francis. An investigation into some of the relations between reading, listening, and intelligence.
46. Tolliver, Crannell. Speech training needs of public school teachers.

Emerson College

M.A. Theses

47. Eastman, Mary Albertina. Blindness as a factor in the cause of defective speech.
48. Novack, Harry S. Speech improvement procedures for the classroom teacher in the elementary school.
49. Smith, Enid Severy. Good speech through character building.

University of Florida

M.A. Theses

50. McLellan, Von Nelle Byrd. A manual of experiences in sound for use in speech training in elementary grades.
51. Wickersham, Julia McDonald. The use of oral interpretation in a speech therapy program of children with cerebral palsy.
52. Wolff, Florabel H. The influence of James Rush's *The Philosophy of the Human Voice* on selected writers of speech.
53. Wood, Beauton. The effects of specialized speech training on selected feeble-minded subjects at the Florida Farm Colony.

Florida State University

M.A. Theses

54. High, Charles. A study of certain auditory functions and abilities in good and poor listeners.
55. Mader, John. The relative frequency of occurrence of English consonant sounds in words in the speech of children in grades one, two, and three.

University of Hawaii

M.A. Thesis

56. Herron, Patricia. The psychological climate provided stutterers by the elementary schools in Honolulu.

University of Illinois

M.A. Thesis

57. Jordan, Evan Paul. A comparative investigation of impromptu speaking and oral reading under conditions of delayed auditory feedback.

Ph.D. Theses

58. Brubaker, Robert Stewart. An experimental investigation of speech disturbance as a function of the intensity of delayed auditory feedback.
59. Hull, Forrest Melvin. An experimental investigation of speech disturbance as a function of the frequency distortion of delayed auditory feedback.
60. Huntington, Dorothy A. An experimental investigation of the relationships between auditory abilities and the speech disturbances produced by delayed auditory feedback.

Indiana University

M.A. Thesis

61. Summers, Hobart L. Perception vs. production skills in analyzing speech sounds for words.

State University of Iowa

M.A. Theses

62. Lerea, Louis. An exploratory investigation of the subjective intra-cranial auditory phenomenon.
63. Linke, Charles Eugene. A study of the influence of certain vowel types on degree of harsh voice quality.
64. Stansell, Barbara Josephine. The establishment of the speech therapy program in the Iowa Annie Wittenmyer Home, Davenport, Iowa.
65. West, Gertrude May. The growth and development of speech pathology and audiology in the United States during the first twenty years of the twentieth century.

Ph.D Theses

66. Cohen, Edwin. A comparison of oral reading and spontaneous speech of stutterers with special reference to the adaptation and consistency effects.
67. Eckelmann, Dorathy Anne. A manual and handbook of public school speech correction.
68. Hanley, Clair Norton. A factor analysis study of speech perception.

Ithaca College

M.A. Thesis

69. Mallia, William M., Jr. An experimental treatment of radio as a rehabilitation therapy in a Veteran's Administration neuropsychiatric hospital.

Johns Hopkins University

M.A. Thesis

70. Bock, Phoebe. The distortion of vowels and diphthongs in the speech of Baltimore school children.

University of Kansas

M.A. Thesis

71. Lessenden, Edith Fleming. An experimental study of growth in responsiveness through speech education.

Kent State University

M.A. Theses

72. Richard, Isabel. Handbook for speech and hearing therapists.
73. Smith, Samuel P. Play techniques and speech correction.

Louisiana State University

M.A. Theses

74. Fleming, Dorothy. A phonetic study of the speech of an English-Speaking Tagalog.
75. Kyzer, Willye Maye. A descriptive study of the speech of the Kosati Indians of Louisiana.
76. Stevens, Cj. The teaching of English in Puerto Rico.

Ph.D. Thesis

77. Laguaite, Jeannette Katherine. Rules for pronunciation of English orthographic symbols with practice material.

Marquette University

M.A. Thesis

78. Rakowska, Sister Mary Claver. The types, incidence and significance of speech defectives in the Detroit parochial schools.

University of Maryland

M.A. Theses

79. Brandt, Ann M. The comparative reliability of CID disc recorded and monitored live voice Auditory Test W-22.
80. Miller, Jeralee J. An analytical evaluation of speech discrimination scores prior to and following an auditory training program.
81. Muth, Edward B. An attempt to standardize the Doerfler-Stewart Test for malingering and psychogenic deafness.
82. Smith, Bettye W. Establishment of normal thresholds for filtered clicks.

University of Michigan

M.A. Theses

83. Fuller, Howard. A study of the variation of diadochokinetic movement of the lips, tongue, and palate of eleven-year-old children.
84. Goldstein, Sedell. An exploratory investigation of mosaic patterns made by dysphasic clients.
85. Lezak, Raymond. Increases of hearing acuity in school children.
86. Pietz, Margaret Elaine. The application of three methods for the improvement of articulation of dysphasics.
87. Rupp, Ralph Russell. An evaluation of the awareness of visual relationships in the dysphasic individual.
88. Schultz, Martin. An investigation of listener ability to identify isolated vowels phonated by familiar and unfamiliar speakers.
89. Taira, Kiyoko. The relationship between delayed speech development and prematurity and its effect on the age of sitting and walking.
90. Theriault, Douglas Joseph. The effect of somnopedia in aiding recall with subjects having an expressive type of dysphasic loss.
91. Walle, Eugene Ludwig. An analysis of forty-three verbatim speech reports on twenty aphasic persons.
92. Winegard, Velma Carpenter. The relationship of functional articulatory defects in speech and silent reading achievement.
93. Yantis, Phillip Alexander. An historical survey of the theories and therapies for stuttering in America.

Ph.D. Theses

94. Boland, John Louis, Jr. A comparison of stutterers and non-stutterers on several measures of anxiety.
95. Garwood, Victor P. An experimental study of certain relationships between intelligibility scores and clinical data of persons with defective articulation.
96. Goodman, Allan C. Imitation of intonation patterns.
97. Herman, George. Variability of the absolute auditory threshold: A psychological study.

Michigan State College

M.A. Theses

98. Frank, William Wiley. An inquiry into narco-synthesis therapy as a possible diagnostic technique in cases of stuttering.
99. Wilson, Mary Jane McClintock. A comparative study of the defective speech of children found in the rural area of Van Buren County and the urban area of the City of Muskegon.

University of Minnesota

M.A. Thesis

100. Bache-Wiig, Barbara. A comparison of the evaluations of reading defects and speech defects.

University of Missouri

Ph.D. Thesis

101. Perkins, William Hughes. Stuttering as approach-avoidance behavior: A preliminary investigation.

University of Nebraska

M.A. Theses

102. Hughes, Elsie. A history and evaluation of the University of Nebraska Speech Clinic.
103. Taylor, Iona. The incidence of speech defects in a bilingual situation.

University of New Mexico

M.A. Theses

104. Long, Charles. A speech survey method for the sixth grade.
105. Weiss, Arthur. A study of the cleft palate problem with suggestions for an improved rehabilitation program for the cleft palate child in the state of New Mexico.

Northwestern University

M.A. Theses

106. Jerger, James Francis. A difference limen recruitment test and its diagnostic significance.
107. Rytzner, Curt P. Acuity for speech at successive stages of fenestration operation.

Ph.D. Theses

108. Halfond, Murray Michael. An audiologic and otorhinolatic study of cleft lip and cleft palate cases.
109. Roach, Robert Ernest. A study of the reliability and validity of bone conduction audiometry.
110. Wood, Nancy E. A study of the speech and language development of right spastic hemiplegics as compared with left spastic hemiplegics with reference to motor, intellectual, and visual perceptual functions.

The Ohio State University

M.A. Theses

111. Foladare, Ethel Anna. An experimental study of a recorded multiple choice test of word reception with university freshmen and public school children as subjects with normal and defective hearing.
112. Greenberg, Kenneth Ray. A study of the relationship between articulatory disorders and personality in the intermediate grades.
113. Hauptman, Laurel. A study of the effects of listener adaptation on the change in the intelligibility of international students speaking English.
114. McCroskey, Robert Lee. An objective evaluation of an in-service training program for the correction of functional articulatory disorders by teachers of the first grade.
115. Miner, Helen Roena. A study of the information content of groups of words.
116. Naylor, Rex Vaughn. A comparative study of methods of estimating the severity of stuttering.
117. Rainey, Margaret Isabel. A study of diadochokinesis among children in relation to the utterance of series of specific syllables.

Ph.D. Theses

118. Anderson, Thomas Brown. An evaluation of two pulse-type tests of hearing.
119. Griffith, Rita Scott. The relationship between phonetic patterns of individuals with superior, average, and poor articulation and their preferences among controlled speech-sound stimuli.

Ohio University

M.A. Thesis

120. Thomas, Donald B. A study of the use of the Massachusetts Group Hearing Test at Ohio University.

University of Oklahoma

M.A. Theses

121. Deming, Burton. A study of the emotional adjustment of functional articulation cases as indicated by the Bender-Gestalt Test.
122. Windham, Laurabeth. Oral developmental factors and functional articulation defects.

Pennsylvania State College

M.S. Theses

123. Drexler, Allan B. An evaluation of the hearing testing, and hearing conservation programs for the new incoming students of The Pennsylvania State College with suggestions for possible revision.
124. Van Hattum, Rolland. A study of air use by cleft palate and normal speaking subjects.

University of Pittsburgh

M.S. Theses

125. Bier, Ruth. A survey of age-grade placement of speech defective pupils in the elementary public schools of Pittsburgh, Pennsylvania.
126. Bruckenstein, Pauline J. Reliabilities of different psycho-physical methods of obtaining pure-tone thresholds of hearing.
127. Comuntzis, Alski. A descriptive study of the summer camp program for preschool hearing handicapped children and their parents.

128. Corbett, Marion. A reader devised for the use of aphasics.
129. Dietze, Hildegard. A study of the understandability of defective speech in relation to errors of articulation.
130. Gray, Anne Shinn. The effect of a distraction technique upon the speech of cerebral palsied children.
131. Joseph, Maurice. A comparison of pure tone thresholds of hearing measured by three psycho-physical tests.
132. Kevilus, Ann. The coordination of occupational therapy with speech therapy in the treatment of cerebral palsied children.
133. McClure, Catherine T. An investigation of the galvanic skin response to a pure tone auditory stimulus in adults with conductive hearing loss.
134. Meixner, Mildred. Coordinating speech therapy and special education for cerebral palsied children.
135. Stewart, Kenneth C. An investigation of the adult galvanic skin response to a pure tone auditory stimulus.

Purdue University

M.S. Thesis

136. Leith, William R. Comparison of judged speech characteristics of athetoids and spastics.

Queens College

M.A. Thesis

137. Brown, Shirley K. Recent trends in cleft lip and cleft palate surgery.

University of Redlands

M.A. Theses

138. Lutz, Kenneth R. A statistical study of the duration of the pregnancies that result in the birth of children with cleft palate.
139. Norman, Richard. A survey of the characteristics of a sample of 'functional' speech disorders in Patton State Hospital (mental).
140. Saxon, James. Comparative study of training and personal characteristics of fluent and stuttering children.

University of Southern California

Ph.D. Theses

141. Kessler, Sydney. An experimental comparison of electroencephalographic patterns of normal and passive-dependent individuals.
142. Lyle, Harry Mason. An experimental study of certain aspects of the electromagnetic movement meter as a criterion to audience attention.
143. Manning, John Arthur. A descriptive study of some interrelationships between speech, laterality, and other aspects of behavior in the cerebral palsied.
144. Murphy, Albert T., Jr. An electroencephalographic study of frustration in stutterers.
145. Ohanian, Edward. An experimental study of the effect of memorizing upon the alpha rhythm.
146. Shepherd, John Ralph. An experimental study of the responses of stage-frightened students to certain scoring categories of the group Rorschach Test.
147. Utzinger, Vernon Alfred. An experimental study of the effects of verbal fluency upon the listener.

Stanford University

M.A. Theses

148. Bradley, Edward George. Hearing disorders of entering Stanford students.
149. Carrothers, Myron Wesley. Pulse tone technique of testing hearing of individual school children.

Ph.D. Theses

150. Johnson, Kenneth Owen. The relative efficiency of the Western Electric 4CA Phonograph and Massachusetts Pure Tone Group Hearing Tests.
151. Lawson, Lucie Isabelle. Idiopathic speech retardation: An experimental analysis of certain diagnostic techniques.

Syracuse University

M.A. Theses

152. Carr, Velma Hailman. Teacher referral of speech cases; a comparison of selection made by classroom teachers and speech specialist for therapy.
153. Feldman, Alan. An evaluation of the effect of audiometric compensation of a hearing aid (photoscription) as against several hearing aids with minor tone controls.
154. Knight, Elmo L. An investigation into some of the aspects of the behavior of deaf children.

Ph.D. Thesis

155. McKay, Elizabeth. An exploratory study of the psychological effects of a severe hearing impairment.

Temple University

M.A. Thesis

156. Conley, Eugene T. A preliminary X-ray study of the larynx position of good and poor speakers.

University of Texas

M.A. Theses

157. White, Ralph Hayden. A comparative investigation of college preparatory programs in the United States public residential schools for the deaf.

M.Ed. Theses

158. Collie, Bessie Madge. Program for a group of slow learners in a Texas junior high school.
159. Diaz-Risa, Ignacio. A speech survey of eighty Spanish-speaking children in four elementary schools of Austin, Texas.
160. Johnson, Alfred Norman. A history and survey of the Blind, Deaf, and Orphan Institute for Colored Youth, Austin, Texas.
161. Leifheit, Betty Jane. A survey of psychological tests used in thirty-three state schools for the blind in the United States.

University of Tulsa

M.A. Thesis

162. Broadd, Paula. The organization of a speech correction area and clinic at the University of Tulsa.

University of Utah

M.S. Theses

163. Ashmead, Allez Morrill. An audio visual slide film survey on primary stuttering for parent teacher guidance.
164. Call, Verne Parkin. A speech and hearing survey of Navajo Indian children at the Intermountain Indian School, Brigham City, Utah.
165. Hunt, Ethel Aleen. A description of hearing losses and some related factors found among students entering the University of Utah.
166. Nelson, Frank Brown. An inexpensive instrumentation for galvanic skin response technique applied to audiometry.

University of Virginia

M.A. Theses

167. Copenhaver, Corena Bernice. An experimental study of the interrelationship of speech and reading defects found in a public school of Virginia.
168. Dew, Rosemary. An electroencephalographic study of stutterers during sleep.
169. Iandoli, Edward William. A comparative study between the hearing impaired and normal children to determine the effect of hearing loss on educational achievement, grade progress, and psychological adjustment.
170. McCoy, Malcolm Ballard. An experimental study of the effectiveness and efficiency of two different methods of audio-metric testing on children in third to seventh grades.
171. Weinberg, Carroll Arnold. A study of auditory discrimination ability of hearing defective elementary school children.

University of Washington

M.A. Theses

172. Lawrence, Clifton Frank. An investigation of a bone conduction speech reception threshold test of hearing.
173. Pendergast, Kathleen Kelleher. An investigation of the possible relationship between delayed speech and spelling errors.

Wayne University

M.A. Theses

174. Revzin, Marvin. The tongue: an aid to diagnosis for speech correctionists.
175. Sharf, Donald Jack. A study of the redundancy of common, three-phoneme, monosyllabic words.

West Texas State College

M.A. Theses

176. Crabtree, Lynette Hutchins. A study of speech evaluation of public school teachers.
177. Peterson, Glenn Appling. An investigation of the oral communication abilities and needs of public school teachers.

Whittier College

M.A. Theses

178. McGowan, Thomas. A study of the relationship between hearing acuity and academic achievement in hard of hearing children before and after radium treatment.
179. Ponce, Robert. A phonetic analysis of the speech of seventy Spanish speaking children as demonstrated through recorded reading.

University of Wichita

M.A. Thesis

180. Overstake, Charles P. The relationship of breast and bottle feeding to speech defects.

University of Wisconsin

M.A. Thesis

181. Crosby, Constance Alban. Audience differentiation of recorded samples of cleft and non-cleft palate speech.

M.S. Theses

182. Horton, Elisabeth Revere. An experimental investigation into the reliability of psychogalvanic skin resistance audiometry with two-, three-, and four-year-old children.
183. James, Robert Frank. A study of sound discrimination in a group of first grade children.
184. Kreul, Eugene James. Correlations between selected measures of maximum repetitive movements and normal and accelerated reading rates.
185. Means, Beverly Jane. An analysis of certain measures of intelligence and hearing in a sample of the Wisconsin cleft palate population.
186. Olsen, Richard Lief. A comparative study of sentence length scores and intelligence scores for a group of monolingual and bilingual children.
187. Paquette, John William. An analysis of the Purdue University Hearing Test Service for the school year 1951-1952.
188. Schwartz, Alvin. A supplementary pure tone audiometric screening test for pre-school children.
189. Townsend, Marguerite Lehmann. An analysis of the administration of a battery of speech diagnostic tests to a group of speech delayed children.
190. Welch, Robert McLeod. An investigation into certain personality differences among speech undergraduates majoring in debate and public address, radio, theatre acting, or speech correction.

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Letters To The Editor

SIR:

The following account of a public school speech therapist getting started in his new job amuses me and I think it should be shared with his colleagues who may have had similar experiences in entering their profession. In post script I may add I have just visited Mr. Wensley's school system and find things running efficiently and harmoniously. Pandora's box is closed. The author seems to be sitting square on the lid.

C. VAN RIPER
Western Michigan College of Education

Pandora at Portage
Bill Wensley, Speech Therapist

. . . September the eighth . . . a job at last . . . goodbye G.I. education and government check . . . here you go, Wensley, speech therapist, into the professional world . . . 'All teachers of the Portage Township Public Schools will meet in the Auditorium at 8:30 a.m.' . . . Lord, the women . . . all talking at once until the superintendent clears his throat . . . The formal welcome . . . the fine year to come . . . education fitted to the pupils' needs . . . home room assignments, textbooks, rules, rules, absences and rules . . . for kindergarten teachers, for elementary teachers, for second grade teachers . . . recesses and physical education . . . public school music . . . art . . . sick leave . . . not a word about speech correction.

. . . School begins . . . Scrubbed young faces marching into classrooms . . . order in the halls . . . Up to your office you go . . . The Superintendent, Mr. Wilkinson, stops you, asks politely how things are coming . . . fine, Mr. Wilkinson, just fine . . . you hope you sound confident . . . And, Wensley, bring up your schedule of appointments and pupils by three this afternoon, please . . . Glad to, Mr. Wilkinson, goodbye, Mr. Wilkinson . . . On the first landing you meet a principal looking very grim . . . 'You speech people sure have a racket, just walking around all the time . . . please get me your schedule today so I can have the copies ready for our teachers by tomorrow' . . . 'As soon as possible, Mr. Oosterholt . . . '

. . . The office at last and you lock the door before you sit down in the lop-sided cast-off swivel chair . . . Well, Wensley, shall we start the schedules . . . by three this afternoon, Wensley . . . You spy the decrepit files in the corner but pull out the desk drawers first . . . A Kleenex box, empty . . . two well chewed pencil stubs . . . four tongue depressors, used . . . an advertisement for a Zenith Hearing Aid which encloses a squashed cigarette . . . four letters from parents requesting help for their children located on Rural Routes 2, 7, 3 and 6 . . . You open the file drawer and the front comes off with a cascade of papers . . . Where are the continued cases? . . . The corrected cases? . . . The new cases? . . . The card file of names? . . . A list of any kind . . . What do you find? . . . Mimeographed drill material, unused . . . a set of *Saturday Evening Post*

advertisements pasted neatly on cardboards . . . a ream of paper, unused and two cartons of manila folders, virginal . . . You tear open the bottom drawer and find the folders, one for each case at last . . . John Higginbottom, artic., age 9, absent Wed., April 1 . . . Mary Doty, age 11, teacher says stutters, Miss Maher's room . . . What's the filing system? . . . Corrections? . . . Carry-overs? . . . New cases? . . . a new schedule by 3:00 p.m. . . . How do female speech therapists file their cases? . . . intuition? . . . you begin to get a glimpse of light . . . you start sorting . . . three piles? or a pile for each grade? Thirty-seven piles? or by schools? or by disorders? or by teachers? . . . Relax, Wensley! Differential relaxation starting from the toes . . . Steady as she goes, m'lad . . . Five hours and no lunch later you have your piles and now how many cases before the janitor cometh . . . One hundred seventy-two, one hundred seventy-three, one hundred eighty-nine, and that's all . . . and I haven't even thought of the kindergartens . . . You know that old army outfit of mine wasn't so bad . . . good Joes, those guys in my platoon . . . good night . . .

. . . Another day, another dollar . . . 'The office just called, Mr. Wensley. They want those schedules right away, Mr. Wensley' . . . Let's see . . . five days a week with an afternoon for parent calls, teacher consultation and paper work . . . five days goes into one hundred and eighty-nine? . . . No, but according to state requirements each case must be seen twice a week for thirty minutes each time . . . one hundred eighty-nine times two times thirty divided by five . . . oh, no . . . dear God, no . . . I've got it; I've got it . . . Fifty-four hours each day and nine point two days per week will do it if my groups average six . . . Wonder if the C rations are any better now . . .

. . . Yes, Mr. Wilkinson, here's my schedule . . . yes, all set to go . . . yes, of course, Mr. Wilkinson . . . Check with the principals . . . yes, Mr. Wilkinson . . .

. . . 'Oh, the new speech teacher . . . Oh yes, yes . . . Just a minute, Mr. Wensley' . . . just an hour, she must have meant, Mr. Wensley . . . 'Let's see, Tommy Streeter? Hmmm! Sorry, we don't have a Streeter . . . better try out at Lake Center School' . . . 'What do you mean, Lake Center? It says right here on his folder that he goes here to Portage.' 'Yes, yes, but we have rerouted all those children this year since we opened the three new schools. He may be at Pershing, Washington or Lake Center . . . You hadn't heard we had a Pershing School? Oh yes, we opened the old country school near Austin Lake . . . Ask the bus driver . . . Oh now, Mr. Wensley, we couldn't possibly give you a list of all the children who have been changed . . . We're just too busy now . . . Come back at the end of the month . . . '

. . . Throw the damned schedule away . . . throw all fourteen of them away . . . You'll have to go to each teacher and get a class list . . . Ninety-three teachers, six schools, one hundred and ninety-two cases now thanks to the transfers, thirty minutes apiece . . . Seventy-four miles and two days later you have a new list and the fifteenth schedule . . . Odd that each of the ninety-three teachers has only one time at which she can spare her children with speech problems . . . And they all want Wednesday from nine to nine-thirty . . . Mrs. Johnson, I believe you have nine children in your class needing speech therapy . . .

No, Mrs. Johnson, we do not take the subnormal . . . no, not the deaf children . . . but, Mrs. Johnson, but . . . but . . . Well, you've got one enemy already, Wensley . . . She's going to report you and you haven't even seen a case yet . . . Korea can't be as cold as Italy, Wensley . . .

. . . You've started, Wensley . . . Here they come, your little charges, sneezing in your face, giggling instead of responding . . . What is your name, little case number one hundred and forty-three? . . . What? Olecyzkski? . . . I'm sure I'll never forget that name or face either . . . Say la-la-la, Samantha . . . Let me see your mouth wide open, John . . . Four extras, all of whom say 'ain't' and 'doin' ' . . . Your teacher says you stutter, Bob? . . . Where's Elmer? Gone to the reform school? . . . That's too bad . . . We're going to miss Elmer . . . Now go back to your rooms . . . quietly, please . . .

. . . Here comes the next batch . . . Take it easy, Wensley. You're not in the army now . . .

SIR:

To my apparently 'small-word' mind, the *Journal* is becoming much too technical. Indeed, it sometimes appears that the criteria for articles printed in the *Journal* is a scholarly-sounding title, involved phrases of words evidently picked to circumvent the process of learning, and lots of statistics. Can't we be scholarly without the use of such big words? The articles would be so much easier to read—and to write, too! It is sometimes obvious that the author must have labored mightily to find a big word when a smaller one would have done just as well.

Many members of the Association are working in public schools trying to put the principles of the researchers to practical use. These contributions of research must be understood by those who deal directly with the child before they are successfully culminated as a contribution to the child with a speech defect.

The members of our profession should, of all people, be most aware of the ineffectiveness of too technical language. Yet, those of us who subscribe most sincerely to the principles of Semantics are the ones who seem to be the greatest transgressors.

I believe the purpose of the *Journal* is to be the dissemination of information concerning the research and experiences of those whose work has resulted in an important contribution to the field. These reports should not be fogged in by a cloud of high-sounding phrases and words outside the scope of normal professional preparation.

The speech therapist working in a school, hospital, public agency, or university clinic has the responsibility of transmitting the important aspects of these reported studies to the parent-public. Super-technical write-ups of relatively non-technical studies only add to the therapist's burden, by making it necessary for him to translate the article with the aid of a medical dictionary, a set of encyclopedias, and the appendix of West, Kennedy and Carr. Some aspects of speech and hearing are technical and these, of course, can only be covered adequately by the use of technical terms. But let us not be guilty of trying to upgrade the quality of an excellent publication by resorting to the use of bigger and more complex words.

If authors of recent articles are out to impress us with the use of fifty-two

carat words, then consider me impressed. But please! I'd also like to be enlightened.

JOSEPH W. HOWARD
Stanislaus, California, County Schools

SIR:

The Twenty-ninth Convention of ASHA proved most stimulating. We exchanged ideas based on research, clinical experience, and careful reflection. Each sectional meeting strengthened the feelings of common goals and problems. I mentioned the need to integrate research in order to help find needed solutions. It became apparent that the only answers are those we get ourselves.

In the December 1953 issue of *JSHD*, Dr. Mildred Templin mentioned how public school therapists could aid research progress. Let's extend the scope to all phases of clinical needs.

It seems to me that integrating research could more rapidly establish or disavow any conceptualization. Although we seek the scientific approach, must we be defensive if other theories conflict with ours? Why try to straight-jacket the data into any one theory? To better understand human behavior, we should think in terms of frameworks, considering such theories concerned with learning, society, culture, personality, and frustration, to mention a base.

We might say that an individual learns to act in a social (or unsocial) manner according to how he handles his primary and secondary drives, and how he reacts to cultural impositions and other factors which may cause frustration behavior. Then we may gain insight whether the speech of a social being is defective because of organic involvement, because of the need for need-satisfaction, or because through frustration the speech behavior is fixated, compulsive, and regressive. Obviously, the door is open for further implications.

To gain our broad and well-rounded perspective, the right hand must know what the left is doing. Research centers must move toward cooperative enlightenment. Selfless devotion should permeate ego-involvement and personal glorification. There is no place for dogma in our field.

From the huge stockpile of research, we can gradually refine radioactive particles of knowledge. These are the principles which can be used to set off a chain reaction which can mushroom into a greater knowledge, and hence a greater service to those handicapped by speech and hearing problems.

ELLIOTT J. SCHAFFER
Utica, New York

Book Reviews

IRWIN, RUTH B. *Speech and Hearing Therapy*. New York: Prentice-Hall, Inc., 1953. Pp. 243. $3.95.

The aim of this book is 'to provide useful suggestions and materials for the therapist in public schools' and in other situations. The author admirably accomplishes her purpose in a direct manner with language that is clear and understandable.

The scope of the work includes professional aspects, historical growth, organizational procedures, diagnostic procedures, speech therapy methods, hearing therapy methods, and parent and teacher education.

At the outset she answers basic questions on matters of particular interest to the prospective and beginning therapist concerning professional qualifications, affiliations, and the code of ethics of the American Speech and Hearing Association. Her discussion of survey methods, selection of cases, scheduling of services, and recording and reporting services explains short-cuts in organizational procedures and includes form letters, tests and other instruments of value to any therapist.

Treating speech and hearing as closely related functions, she offers direct assistance in the study of the individual, his motivation and instruction at all grade levels. Articulatory, phonatory and fluency problems are treated thoroughly. Wisely enough, she does not enlarge on speech problems associated with cleft palate, cerebral palsy and mental retardation, but explains that in these types, deviations in articulation, voice, and rhythm may occur. At the same time, this volume can be most helpful to the therapist who is working with these problems.

One of the many highlights of the text is the chapter on in-service training of teachers and parents. At this point in the book, Dr. Irwin answers the question asked by so many young therapists: 'How should I talk with parents? What should I say?' Her approaches are clear-cut and lead directly to successful 'joint quest' help for the child with speech and hearing problems. Teachers in any area of the exceptional children's program will find many practical helps in this part of the book.

Appropriately, emphasis is placed upon the need for good voice and diction for the classroom teacher, plus her ability to incorporate speech education into her work with children.

Contents of the appendices will appeal to every therapist. Here again is included many helpful tests, forms, methods and lesson plans. The text is carefully annotated and there are numerous well-selected items of related reading.

C. RAYMOND VAN DUSEN.
University of Miami

HECK, ARCH O. *The Education of Exceptional Children*. (2nd ed.) New York: McGraw-Hill Book Co., 1953. Pp. 513. $6.00.

This book is designed as a challenge to teachers, parents, and laymen. There are four major parts of the book dealing with the education of the socially, physically and mentally handicapped child and with problems of administration. The educational and case problems are discussed and some programs are described. The discussions of the deaf, the hard of hearing, and the speech defective child have been included under the physically handicapped. This review will confine itself to a discussion of these chapters.

There is considerable attention given to historical factors. This is of definite interest, but occasional handling of it is questionable. For instance, under the beginnings of speech clinics some private schools are listed without evaluation, including one currently active school of doubtful repute. Although considerable useful information has been included, the general impression is that the author does not have a very precise grasp of the field. By far the most serious shortcoming is a complete lack of awareness of the present day training programs and standards. There is no reference to the *Journal of Speech and Hearing Disorders* as a source of information and the ASHA is not mentioned. Under *Training for Speech Correctionists*, the standards are quoted from

Book Reviews is edited by Kenneth Scott Wood, University of Oregon.

a bulletin issued in 1931. The same lack of precision is apparent in discussing the training and experience of teachers of the hard of hearing.

In an effort to provide different points of view, the author often creates a confused picture, particularly in the description of speech problems. In a summary in which the itinerant speech correction teacher is being discussed we find, 'Teachers with a minimum of technical training are able to do fairly effective work in correcting defects.' The activities of state health departments in the testing of and securing of medical services for the hard of hearing are completely ignored. Sometimes it is difficult to know to whom this book is being directed. For instance, under *Guiding Principles for Speech Defects*, we have the statement, 'Diagnose carefully.' This can hardly be done by the classroom teacher or the person interested in the exceptional child in a broad sense. Later on the same page there is a reference to the special teacher and what she must be able to do. There are several instances of inappropriate documentation and actual inaccuracies. For instance, another textbook on exceptional children, rather than a medical source, is quoted with regard to the result of infections in the middle ear. The word 'psychoanalytic' is used in a context in which the author apparently meant 'psychotherapy' to take care of voice defects due to 'mental conditions.' A 'fallen palate' or 'fallen soft palate' is listed as a physical cause for lisping.

In view of such errors and omissions, this reviewer can hardly recommend this book as a textbook for a course in the education of exceptional children.

STANLEY AINSWORTH.
University of Georgia

POLLOCK, MORRIS P. AND MARIAM POLLOCK. *New Hope for the Retarded: Enriching the Lives of Exceptional Children.* Boston: Porter Sargent, 1953. Pp. 176. $4.50.

The authors of this book, who conduct a school for emotionally troubled and mentally retarded children, have combined descriptions of their procedures and methods, practical suggestions, and an unfortunately small amount of information to make up a volume that is disappointing to the reader who is looking for organized technical material. It is perhaps unduly encouraging to the layman who has a retarded child. The 12 chapters deal with a variety of topics, from a discussion of the 'human qualities' of retarded children to a presentation of scripts for plays, radio programs, and tableaux presented at the Pollock School.

One of the longer chapters deals with the problems of teaching 'speechless' children to talk. The authors advise making a preliminary examination of the physical apparatus before speech training is begun and include the recommendation that the speech teacher check to see if the adenoids are too large. They list the following steps for teaching speech to children whose mental or emotional problems have prevented the acquisition of speech at a normal age: Create first a communicative relationship between teacher and pupil, being sure that 'the teacher's mind leads the child's'; teach consonants and vowels; develops the volume of breath; teach the alphabet; help the child to recognize and duplicate noises; work for combinations of consonants and vowel sounds; teach words and phrases.

The descriptions and lists of educational materials, books, and games are helpful, but the remainder of the book has little value for the speech therapist.

CHARLOTTE G. WELLS.
University of Missouri

INGRAM, CHRISTINE P. *Education of the Slow Learning Child.* New York: The Ronald Press Co., 1953. Pp. 359. $5.00.

This is frankly a textbook for the potential teacher of slow learning children and is equipped with such accessories as suggested readings and student exercises. It manages to avoid a good many of the pit falls which lie in the path of such works. For one thing, it is quite readable and would probably be an easy book from which to teach. For another, in discussing the needs and potentialities of the mentally retarded child it keeps its touch with reality by presenting the results of surveys and research; it does this without drowning the student in a sea of data. The sections on classroom procedure employ detailed illustrations without giving cookbook recipes for the teacher to follow.

The speech correctionist will naturally be curious about the handling of the subject of speech defects and speech improvement. Not much is said on this; but the importance of the subject is recognized, and the student is guided to a fairly ample list of writings in the speech field. The role of the speech correctionist is mentioned, but not discussed.

The consistency with which the book is directed to its specific purpose reduces the background information on mental retardation to a very brief review. The speech correctionist with a few years of public school experience will find little here that he has not already learned. If the text has a useful place in our field, it is probably in the teacher-training program where it might provide suitable background reading.

As is the custom in texts on education, the material on classroom procedures is in the optative mood. The program described seems admirable to this reviewer, but it is to be feared that the number of mentally retarded children for whom such opportunities are provided is still very small.

GEORGE HERMAN.
University of Michigan

BRAZIÉ, GLADYS. *Speech Practice Book: For Speech Improvement and Speech Correction.* Portland: J. K. Gill Co., 1953. Pp. 154. $2.50.

This book is designed primarily for practicing 'newly established speech patterns,' according to the author, a public school speech therapist.

It is comprehensive in scope, covering speech sound tests with jingles and riddles, phonetic order jingles, jingles for relaxation, rhythm and improvement of jaw, lips and tongue action in articulation. The book contains many suggestions for using the author's material in games, puppetry, and other media. One section is devoted to seasonal material.

The content of the book is effectively arranged, attractively printed, and well-indexed for ready reference. The format is good, and the total effect is pleasing.

Many children have enjoyed and benefited from parts of Edward Lear's *A Nonsense Alphabet,* which some of the author's jingles resemble. The fact that children in the author's classes have helped to develop some of the material might serve to stimulate correctionists, teachers and parents to encourage children to be creative along this line.

Those correctionists and teachers who prefer a more meaningful and functional approach to establishing sounds, however, may question the amount of probable carryover of this kind of material. They may feel that some of the materials over-emphasize the old-time tongue-twister type of jingle. They might point out that the present-day trend is to simplify, to use fewer of the sounds in a setting of meaningful context.

The chief value of this book will depend on who uses it and how it is used. For some it may provide a source of selection to vary the always essential follow-up techniques. Certainly, as attested to by coworkers in the *Forward,* Miss Brazié has enjoyed an appreciable amount of success through this practice medium.

AGNES M. FRYE.
California State Department of Education

CARROLL, JOHN B. *The Study of Language: A Survey of Linguistics and Related Disciplines in America.* Cambridge: Harvard University Press, 1953. Pp. 289. $4.75.

This work is an outcome of a report entitled *A Survey of Linguistics and Related Disciplines* submitted to the Carnegie Corporation of New York in December, 1950. The author's purpose was to describe the history, scope, problems, and present state of the study of language and communication with particular attention given to suggesting the mutual relations of various approaches to language study.

In the chapter entitled *The Science of Linguistics,* the author conceives of linguistics as one of the most advanced of the social sciences and avers that its methodology is sound and highly developed and that its data is highly concrete and manageable. Critical treatment is given to the major contributions to the field of linguistics, its history, subdivisions, methodological trends, statistical study, and philological aspects. The author believes that the body of knowledge which is developing in lingustic science is prerequisite for any more general communication science.

The chapter headed *Linguistics and Psychology* presents points of view regarding the implications of psycholinguistics for psychological theory and the conduct of psychological research. Attention is given to individual differences in language behavior, the origin and development of language, learning second languages, language and thought, and speech pathology.

The outline of the development of speech pathology is disappointingly meager, consisting of only two paragraphs. The only two speech disorders mentioned are the aphasias and stuttering.

Other chapters are devoted to linguistics and its relationship to philosophy and to the social sciences in general. A long chap-

ter is given over to *Language and Education*, one to *Communication Engineering*, and one to *Organizations, Personnel, and Publications*. In a final chapter the author discusses the future of language studies and makes specific recommendations.

This book should be read by every serious student of speech in order to help him see the scope of language and communication. It would be an excellent outline to use in a seminar on graduate studies. The author raises many searching questions which need answering and refers the student to basic books in every area discussed.

KENNETH SCOTT WOOD.
University of Oregon

GOLDMAN, STANFORD. *Information Theory*. New York: Prentice-Hall, Inc., 1953. Pp. 385. $9.00.

The primary objective of this book is to present a discussion of the principles of information theory based on the work of C. E. Shannon and, to a lesser extent, the earlier work of Norbert Wiener. The author does take exception, however, to some of their points of view. He has modified Shannon's work so that the information aspects of individual messages can be treated more readily and so that the semantic aspects as well as language aspects of information may be considered. A detailed treatment is given of the transformation of both information and constraints from the time to the frequency domain, and general treatment is given to various sampling theorems. There is also a rather thorough treatment of the information theory aspects of random noise.

Definitions of fundamental terms sometimes do not agree with those of Shannon or other authorities. Among these terms are *random noise, white noise, information*, and *ergodic ensemble*. Certain new words and expressions have been introduced, such as *liniva, quadiva*, and *ergodic range*.

The basic aspects of the subject are presented at a mathematical level that would be understandable to the first-year graduate student in electrical engineering. Other parts of the book were written at a more elementary level.

BOSSELMAN, BEULAH C. *The Troubled Mind: A Psychiatric Study of Success and Failure in Human Adaptation*. New York: The Ronald Press Co., 1953. Pp. 206. $3.50.

This book begins with an account of the processes of development from infancy through old age, with particular attention to the specific problems that must be solved at each age level if one is to reach a satisfactory state of adult adaptation. The patterns of defeat which have their extreme representation in neuroses and psychoses are then described and interpreted. Finally, suggestions are offered for improvement of mental health, taking into account the contributions of those groups whose work is closely concerned with human relationships.

The author is a practicing psychiatrist and psychoanalyst in Chicago as well as a member of the staff at the University of Illinois Medical School.

NOTCUTT, BERNARD. *The Psychology of Personality*. New York: Philosophical Library, 1953. Pp. 259. $4.75.

According to the author, the purpose of this book is that of 'direction-finding' in the field of personality. Personality theories are divided into three kinds: Trait theories; environmental theories; and interaction theories. Passing from theories to methods, the author reviews techniques for studying personality. These include projective tests, play therapy, psychoanalytic interviews, experimental real life situations, and group tests of interaction. One chapter is devoted to *The Logic of Validation*.

CARTER, HOMER L. J. AND DOROTHY J. McGINNIS. *Learning to Read: A Handbook for Teachers*. New York: McGraw-Hill Book Co., 1953. Pp. 214. $3.50.

The authors are directors of the Psycho-Educational Clinic at the Western Michigan College of Education in Kalamazoo. Their book is designed to give practical suggestions for the improvement of reading at all levels. It assumes that the basic principles underlying learning and consequently instruction are essentially the same at all ages. No attempt is made to emphasize the difference between initial instruction and corrective reading.

Seven main points are accentuated: pay attention to the individual; emphasize interpretation of a child's performance rather than merely an evaluation of his achievement; choose adequate techniques and methods, no specific one being adequate in all cases; secure adequate materials and adjust to interest and reading level of the child; give the student an opportunity to set up his own reading objectives and an

opportunity to attain them at his own rate; avoid emotional blocking; and emphasize continuity of the reading process.

DANIEL, ROBERT S. AND C. M. LOUTTIT. *Professional Problems in Psychology.* New York: Prentice-Hall, 1953. Pp. 416. $5.50.

This is aimed at the graduate student working toward professional status in psychology as well as the professional psychologist. The three areas covered in major sections of the book are literature search, scientific reports, and professionalization. The introduction concerns orientation in and development of the modern profession of psychology.

The authors survey psychological literature, discuss bibliographic problems and library problems in connection with classification. About 100 pages are devoted to writing reports of psychological research, manuscript preparation, problems of publication, and minor forms of scientific reporting. The third section concerns fields of psychology, organizations, professional problems and responsibilities, and the academic status of psychology.

An appendix of 70 pages gives an annotated list of reference books of value in psychology; a bibliography of journals in psychology; sources of books, tests, apparatus, equipment, and supplies; and a glossary of abbreviations useful to the psychologist.

DOLL, EDGAR A. *The Measurement of Social Competence: A Manual for the Vineland Social Maturity Scale.* Minneapolis: Educational Test Bureau, 1953. Pp. 664. $7.75.

This volume presents the Vineland Social Maturity Scale for the measurement of social competence. It elaborates previous publications and includes the background of the method, detailed manual, basic data, preliminary standardization and validation, and illustrations of the group and clinical application of the scale.

Part I concerns the philosophy of the method in which the author sets forth six major premises upon which his theory of social competence is based. Part II consists of 220 pages on the construction of the Vineland Scale, its design and item analysis. Part III describes in 100 pages the administration of the scale and gives illustrative transcripts of its use in case examinations. Part IV presents in another 100 pages an extended account of data pertaining to standardization and validation of the scale. Part V, consisting of the last 200 pages, discusses the various uses to which the scale has been put including a long series of exploratory studies.

Essentially the book is a detailed presentation of a particular method for the quantitative estimation of personal-social maturation.

ORBAN, BALINT, ED. *Oral Histology and Embryology.* (3rd ed.) St. Louis: The C. V. Mosby Co., 1953. Pp. 364. $8.50.

This volume consists of 15 chapters on the following topics: *Development of the Face and Oral Cavity; Development and Growth of the Teeth; Enamel; The Dentin; Pulp; Cementum; Periodontal Membrane; Maxilla and Mandible; Oral Mucous Membrane; Glands of the Oral Cavity; Eruption of the Teeth; Shedding of the Deciduous Teeth; Temperomandibular Joint; Maxillary Sinus;* and *Technical Remarks.*

The book is liberally illustrated with both color and black and white photographic plates. The 15 contributors are all from schools of dentistry.

Considerable attention is given to such structures as the soft palate, uvula, tongue, mandibular apparatus, nasal cavity, lips, and others which would be of interest to the student of the organic speech pathologies.

TOWNSEND, JOHN C. *Introduction to Experimental Method: For Psychology and the Social Sciences.* New York: McGraw-Hill Book Co., 1953. Pp. 220. $3.30.

This is an introductory text to aid the student in his preparation for work in research design and statistical methods. The author discusses psychology and science, causal sequences and the meaning of explanation, 'arm chair' experimentation, locating and simplifying problems, formation of hypotheses, independent and dependent variables, experimental controls, procedure for experimentation, methods of inference, apparatus, and various methods of interpreting conclusions. As examples, reports of two hypothetical experiments are given. The appendix contains tables of squares, square roots, chi square, and probability for correlation coefficients and *t* scores.

JENKS, WILLIAM F., ED. *Special Education of the Exceptional Child.* Washington, D. C.: The Catholic University of America Press, 1953. Pp. 156. $2.75.

This is a report of the first workshop on special education sponsored by the Catholic University of America in June, 1952. A series of 12 papers are presented by members of the university staff on the following topics: *Social and Psychological Problems of the Atypical Child; Remedial Reading; The Mentally Retarded Child; The Socially Maladjusted Child; Speech Correction; The Gifted Child; Tests and Measurements; The Visually Handicapped Child; The Child with Auditory Difficulties; Psychological Implications of Adolescence; The Undervitalized Child;* and *The Physically Handicapped Child.*

Part II gives summaries of four seminar discussions held after the above papers were delivered. In the discussion on speech correction the participants concluded: 'Although trained teachers in the field of speech correction are needed immediately in the parochial school systems, care should be taken that future teachers be trained in Catholic colleges and universities. Often the training provided in non-Catholic colleges and universities and the text books used in the area of speech correction are based on behavioristic and materialistic philosophy and psychology.'

FESTINGER, LEON AND DANIEL KATZ, EDS. *Research Methods in the Behavioral Sciences.* New York: The Dryden Press, 1953. Pp. 660. $5.90.

Nineteen contributing authors have written 13 chapters around five major headings: *Research Settings; Procedures for Sampling; Methods of Data Collection; Analysis of Data;* and *Application of Research Findings.*

The book is intended for advanced students and concerns itself with recent developments in research methods and procedures related to the problems of social psychology. The contributors have all been connected in some way with the Institute for Social Research at the University of Michigan.

LINDQUIST, E. F. *Design and Analysis of Experiments in Psychology and Education.* Boston: Houghton Mifflin Co., 1953. Pp. 393. $6.50.

This is presented primarily as a teaching instrument and learning aid for students and research workers in selecting, devising, analyzing, and interpreting experimental designs.

The author presents first a discussion of fundamental concepts and basic designs and follows with a 15-chapter discussion of the following topics: Chi square, simple randomized design, analysis of variance in double-entry tables, treatments $\times$ levels designs, treatments $\times$ subjects designs, groups within treatments design, random replication design, factorial designs, three-dimensional designs, higher dimensional designs, Latin square designs, mixed designs, analysis of covariance, tests concerned with trends, and estimation of variance components in reliability studies.

SWENSON, GEORGE W. *Principles of Modern Acoustics.* New York: D. Van Nostrand Co., 1953. Pp. 222. $4.00.

The principal emphasis in this textbook is given to general methods of acoustic analysis illustrated by application to some typical devices. Material is drawn mainly from standard works on acoustics, mechanics, and electricity as indicated by many footnotes.

One chapter of 13 pages is devoted to speech and hearing and discusses the human voice, structure and functioning of the human ear, psychological attributes of sounds, decibel notation, and characteristics of speech and music. A chapter on architectural acoustics is included.

SENN, MILTON J. E., ed. *Problems of Infancy and Childhood.* (Transactions of the Sixth Conference) New York: Josiah Macy, Jr. Foundation, 1953. Pp. 160. $2.50.

This is an edited transcript of papers and group interchange presented by four experts on infancy and childhood and a limited number of guests. The papers presented were: *Emotional Developments in the First Year of Life* by Sibylle Escalona; *Brief Review of World Health Organization Activities* by Knut Kjellberg; *Observation of Individual Tendencies in the First Year of Life* by Katherine M. Wolf; and *Excessive Crying in Infants — A Family Disease* by Ann Stewart.

LECRON, LESLIE M., ed. *Experimental Hypnosis.* New York: The Macmillan Co., 1952. Pp. 483. $6.00.

This is a composite of independent papers written on various phases of hypnosis by 12

psychologists, 11 psychiatrists, and one dentist. Topics treated include hypnotic induction, hypnotic susceptibility, narcotic hypnosis, age regression under hypnosis, time distortion, control of the heart rate, automatic writing, extrasensory perception, and hypnosis in obstetrics and dentistry.

VON FOERSTER, HEINZ and others, eds. *Cybernetics: Circular Causal and Feedback Mechanisms in Biological and Social Systems.* (Transactions of the Ninth Conference) New York: Josiah Macy, Jr. Foundation, 1953. Pp. 184. $4.00.

This is another in a series of published transcriptions of discussions and conversations in the area of cybernetics dealing with a general problem of communication between disciplines.

The Ninth Conference presented symposia on the following topics: *The Position of Humor in Human Communication; The Place of Emotions in the Feedback Concept; Homeostasis; Discrimination and Learning in Octopus; Reduction of the Number of Boolean Functions; Central Excitation and Inhibition; Mechanical Chess Player; Turbulence as Random Stimulation of Sense Organs; Investigation on Synaptic Transmission;* and *Feedback Mechanisms in Cellular Biology.*

MATHUR, MURLI LAL. *Stammering.* Jodhpur, India: Multan Mal 'Azad,' 1952. Pp. 36. As. 8 (Approx. $0.11).

This pamphlet is an account of the personal experiences and conclusions of the author regarding his own stuttering. His point of view is based on introspection and no references are cited.

ASHBY, W. ROSS. *Design for a Brain.* New York: John Wiley and Sons, 1952. Pp. 260. $6.00.

The author is Director of Research at the Psychiatric Hospital (Barnwood House) in Gloucester, England and has written extensively in scientific journals on the functioning of the brain.

The book does not attempt to treat all cerebral mechanisms, but is concerned with an attempt to solve the specific problem of the origin of the nervous system's unique ability to produce adaptive behavior. The work is based on the fact that the nervous system behaves adaptively and on the hypothesis that it is essentially mechanistic. The author proceeds on the assumption that these two data are not irreconcilable.

The author's main solution to the origin of the nervous system's power of being self-organizing and adaptive is contained in the chapter entitled *The Principle of Ultrastability.* The main account in the first 18 chapters is non-mathematical. The mathematical foundations are given as an appendix arranged parallel to the main account in order to facilitate cross-reference.

WINSTANLEY, J. W. *Textbook on Sound.* New York: Longmans, Green and Co., 1952. Pp. 239. $2.60.

This British textbook was written for the first-year university student. It discusses in 11 chapters the nature of sound, wave motion, velocity of sound, refraction, measurement of frequency, vibration of objects, resonance, acoustics of buildings, intensity, analysis of sound, recording, and simple harmonic motion.

Five pages are devoted to the human voice and hearing.

THOMSON, MARY M. *Talk It Out with Your Child.* New York: McGraw-Hill Book Co., 1953. Pp. 277. $3.50.

This concerns better child guidance through family conversations. Beginning with the topic, *The Art of Talking with Children,* the author discusses the problems in relation to various age levels and concludes with *The Adopted Child* and *The Values of Family Talk.* Much of the material is presented in dialogue form.

TEICHER, JOSEPH D. *Your Child and His Problems: A Basic Guide for Parents.* Boston: Little, Brown and Co., 1953. Pp. 302. $3.75.

The author is director of the Child Guidance Clinic of Los Angeles and attending physician at the Children's Hospital. The book covers a wide range of topics including eating and feeding, keeping clean, sex, jealousy, sleep fears, play and possessions, illness and convalescence, and family stresses and strains.

One chapter is devoted to *Speech, Handedness and Reading Problems* in which the author briefly discusses speech development, bilingualism, forbidden language, delayed speech, faulty speech sounds, lisping, stuttering, and reading difficulties.

Current Publications

ACKOFF, RUSSELL L. *The Design of Social Research*. Chicago: University of Chicago Press, 1953. Pp. 431. $7.50.

ALEXANDER, FRANZ AND HELEN ROSS, EDS. *Twenty Years of Psychoanalysis: A Symposium in Celebration of the Twentieth Anniversary of the Chicago Institute for Psychoanalysis*. New York: W. W. Norton and Co., 1953. Pp. 309. $3.75.

BAKWIN, HARRY AND RUTH M. BAKWIN. *Clinical Management of Behavior Disorders in Children*. Philadelphia: W. B. Saunders Co., 1953. Pp. 495. $10.00.

BELL, DAVID A. *Information Theory and Its Engineering Applications*. New York: Pitman Publishing Corp., 1953. Pp. 146. $4.00.

BLANCKE, WILTON W. *General Principles of Language and Experiences in Language*. (Rev. ed.) Boston: D. C. Heath and Co., 1953. Pp. 493. $3.20.

BOSSARD, JAMES H. S. *Parent and Child: Studies in Family Behavior*. Philadelphia: University of Pennsylvania Press, 1953. Pp. 308. $5.00.

CARROLL, JOHN B. *The Study of Language: A Survey of Linguistics and Related Disciplines in America*. Cambridge, Mass.: Harvard University Press, 1953. Pp. 289. $4.75.

CARTER, HOMER L. J. AND DOROTHY J. MCGINNIS. *Learning to Read: A Handbook for Teachers*. New York: McGraw-Hill Book Co., 1953. Pp. 223. $3.50.

CARTWRIGHT, DORWIN AND ALVIN F. ZANDER. *Group Dynamics: Research and Theory*. Evanston, Ill.: Row, Peterson and Co., 1953. Pp. 642. $6.00.

DANIEL, ROBERT S. AND CHAUNCEY M. LOUTTIT. *Professional Problems in Psychology*. New York: Prentice-Hall, Inc., 1953. Pp. 416. $5.50.

Doctoral Dissertations: Abstracts and References (1942-1948). Vols. 5, 6, and 7. Iowa City: University of Iowa, 1953. Pp. 1120. $5.00.

DOLL, EDGAR A. *The Measurement of Social Competence: A Manual for the Vine-Land Social Maturity Scale*. Minneapolis: Educational Test Bureau, 1953. Pp. 664. $7.75.

DOLLARD, JOHN. *Steps in Psychotherapy: Study of a Case of Sex-Fear Conflict*. New York: Macmillan Co., 1953. Pp. 231. $3.50.

FESTINGER, LEON AND DANIEL KATZ, EDS. *Research Methods in the Behavioral Sciences*. New York: Dryden Press, 1953. Pp. 660. $5.90.

FINK, DAVID H. *Release from Nervous Tension*. (Rev. ed.) New York: Simon and Schuster, Inc., 1953. Pp. 283. $2.95.

GOLDMAN, STANFORD. *Information Theory*. New York: Prentice-Hall, Inc., 1953. Pp. 398. $9.00.

HURLOCK, ELIZABETH B. *Developmental Psychology*. New York: McGraw-Hill Book Co., 1953. Pp. 565. $6.00.

INGRAM, CHRISTINE P. *Education of the Slow Learning Child*. (2nd ed.) New York: The Ronald Press Co., 1953. Pp. 359. $5.00.

IRWIN, RUTH B. *Speech and Hearing Therapy*. New York: Prentice-Hall, Inc., 1953. Pp. 243. $3.95.

JACKSON, WILLIS. *Communication Theory*. New York: Academic Press, Inc., 1953. Pp. 544. $11.00.

JUNG, CARL G. *Two Essays on Analytical Psychology*. New York: Pantheon Books, 1953. Pp. 338. $3.75.

LAIRD, CHARLTON G. *The Miracle of Language*. Cleveland: World Publishing Co., 1953. Pp. 320. $4.00.

NELSON, JOSEPH R. *Writing the Technical Report*. (3rd ed.) New York: McGraw-Hill Book Co., 1952. Pp. 372. $4.50.

NICHTENHAUSER, ADOLPH AND OTHERS. *Films in Psychiatry, Psychology, and Mental Health*. (Medico Audio-visual Instit. of Ass. of Amer. Med. Coll.) New York: Health Education Council, 1953. Pp. 269. $6.00.

OLIVER, LESLIE C. *Parkinson's Disease and Its Surgical Treatment*. New York: John de Graff, Inc., 1953. Pp. 95. $2.50.

ORR, JOHN. *Words and Sounds in English and French*. New York: Macmillan Co., 1953. Pp. 287. $4.25.

PECK, LEIGH. *Child Psychology: A Dynamic Approach*. Boston: D. C. Heath and Co., 1953. Pp. 536. $5.25.

POLLOCK, MORRIS P. AND MIRIAM POLLOCK. *New Hope for the Retarded: Enriching the Lives of Exceptional Children.* Boston: Porter Sargent, 1953. Pp. 176. $4.50.

RICHARDSON, E. G. *Technical Aspects of Sound.* (2 vols.) Houston, Texas: Elsevier Press, Inc., 1953. Pp. 506. $11.00.

STEPHENSON, WILLIAM. *The Study of Behavior: Q-Technique and Its Methodology.* Chicago: University of Chicago Press, 1953. Pp. 385. $7.50.

TAYLOR, WILLIAM. *The Relationship Between Psychology and Science.* New York: Grune and Stratton, 1953. Pp. 243. $2.75.

VAN RIPER, CHARLES, ED. *Speech Therapy: A Book of Readings.* New York: Prentice-Hall, Inc., 1953. Pp. 319. $3.95.

WIENER, MEYER AND A. EDWARD MAUMENEE. *Progress in Ophthalmology and Otolaryngology. (Vol. 1, Ophthalmology)* New York: Grune and Stratton, 1953. Pp. 356. $8.75.

Abstracts

GOODHILL, V. A tinnitus identification test. *Ann. Otol., etc., St Louis*, 61, 1952, 778-788.

A procedure is presented for studying tinnitus which requires the patient to match the quality of his subjective sound against 27 different recorded samples. (*F.M.L.*)

GRAYBIEL, A. AND J. I. NIVEN. The absence of residual effects attributable to the otolith organs following unilateral labyrinthectomy in man. *Laryngoscope*, 63, 1953, 18-30.

Five normals and five subjects with previous labyrinthectomy for Meniere's disease were exposed to centripetal force on a human centrifuge. Objects in the visual field appeared to change position in space, and bodily position seemed to change. Comparison of the experimental and control groups showed no significant differences in responses. (*F.M.L.*)

SALTZMAN, M. Audiometric studies following mesencephalotomy and thalamotomy. *Arch. Otolaryng., Chicago*, 56, 1952, 194-203.

Twelve patients were studied after electrocoagulation produced mesencephalic or thalamic lesions. Six cases retained normal hearing. The other six had low frequency losses and five of these showed a greater contralateral high-tone loss. Other varying characteristics resulted. All hearing losses were only temporary. (*F.M.L.*)

WOLFF, D. Organ of Corti as we see it today, one hundred years after its discovery. *Arch. Otolaryng., Chicago*, 56, 1952, 588-609.

Wolff relates the history, techniques, and contributions of Corti's work, brings knowledge of the organ of Corti up to date, and details questions still to be answered. Photographs are included. (*F.M.L.*)

KATSUKI, Y. AND W. P. COVELL. The organ of Corti by phase contrast microscopy. *Laryngoscope*, 63, 1953, 1-17.

The organ of Corti is studied under phase contrast microscopy to illuminate its finer cell structure. Twenty photomicrographs are shown. (*F.M.L.*)

SHUSTER, B. H. AND SHUSTER, A. R. Physiology of the ear. *Arch. Otolaryng., Chicago*, 56, 1952, 294-312.

Summaries are given of articles on otic physiology published in 1950-1951. (*F.M.L.*)

HIND, J. An electrophysiological determination of tonotopic organization in auditory cortex of cat. *J. Neurophysiol.*, 16, 1953, 475-489.

An investigation of the differential frequency sensitivity of various regions of the auditory cortex of the cat. These were isolated by inducing strychnine potentials into the cortex.

Three acoustic areas were investigated. The first, confirming findings by other authors, was in the vicinity of the posterior ectosylvian fissure, 1,600-2,000 cps; at the anterior ectosylvian sulcus, 30,000-40,000 cps.

The second area was composed of three regions: on the anterior ectosylvian gyrus, 300-700 cps; ventral portion of the posterior ectosylvian sulcus extending posteriorly across the posterior ectosylvian gyrus, 25,000-

Abstracts is edited by Jack Matthews, University of Pittsburgh, assisted by the following committee: Asa J. Berlin, Pennsylvania State University; Virginia B. Carroll, Minneapolis Veterans Hospital; Charles F. Diehl, University of Kentucky; James V. Frick, Pennsylvania State University; Inez E. Hegarty, Mt. Holyoke College; Lester L. Hale, University of Florida; Frank M. Lassman, University of Minnesota; Georgiana M. Preacher, Temple University; Sylvia O. Richardson, San Diego, Calif.; George H. Shames, University of Pittsburgh; D. C. Spriestersbach, State University of Iowa; Jesse J. Villarreal, University of Texas. The committee systematically reviews 203 journals for articles of interest to members of ASHA.

45,000 cps; on the pseudosylvian gyrus, 7,000-45,000 cps.

No third acoustic area was determined in the anterior ectosylvian, anterior suprasylvian, or coronal gyri upon examination. (*V.B.C.*)

McConnell, F. and Carhart, R. Influence of fenestration surgery on bone conduction measurements. *Laryngoscope*, 62, 1952, 1267-1292.

Preoperative and postoperative audiometric study of 58 fenestrated subjects showed significantly lower bone conduction thresholds from 1000 to 4000 cycles after surgery. The air-bone gap for class 'B' (Shambaugh) cases averaged the same as that for class 'A' when compared after surgery. The size of the gap differed by frequency. The idea is rationalized that bone conduction audiograms give a distorted measure of cochlear function in the patient with stapes fixation and that fenestration produces partial reversal of the 'otosclerotic notch.' (*F.M.L.*)

Heck, W. E. Vestibular responses in the newborn. *Arch. Otolaryng., Chicago*, 56, 1952, 573.

Three newborn babies were stimulated by rotation in a Barany chair. Each showed conventional active nystagmus responses after rotation. (*F.M.L.*)

Jerger, J. A difference limen recruitment test and its diagnostic significance. *Laryngoscope*, 62, 1952, 1316-1332.

The Luscher DL Test method was modified by offering the test at 15 db, by excluding the stimulus interruption, and by the use of ascending presentation. The revision was standardized on 39 normals and administered to 89 'abnormals.' Pure conductive losses and cerebellopontine angle lesions showed normal DLs. DLs were abnormally small in etiologies of sensory receptor mechanism damage. DL test results correlated well with binaural loudness balance results in all cases (9) tested. (*F.M.L.*)

Guild, S. R., Schuknecht, H. F. and Lempert, J. Otosclerosis study group. *Trans. Amer. Acad. Ophthal. Otolaryng.*, 57, 1953, 356-396.

Three articles are included: 'Does Otosclerosis Cause Cochlear Nerve Degeneration?'; 'Lesions of the Organ of Corti'; and 'For the Good of Otology.' In the first paper, the author states that it does not seem logical to attribute to otosclerosis all the cochlear atrophy found in otosclerotic ears.

In his article on the organ of Corti, Dr. Schuknecht reports on the findings from his anatomical, physiological and audiometric studies on experimental animals in which hair cells and nerve fibers were independently destroyed. He found that outer hair cells were more sensitive than inner hair cells to most forms of injury and also placed emphasis on the heretofore little mentioned effects of damage to the supporting structors of the organ of Corti.

The third article by Dr. Lempert is a statement of explanation and defense of the basic surgicotechnical principles of his fenestration surgery. (*S.O.R.*)

Békésy, G. v. Gross localization of the place of origin of the cochlear microphonics. *J. acoust. Soc. Amer.*, 24, 1952, 399-409.

This article is concerned with (1) the measurement of insulation of the various cochlear membranes, (2) the electrical conductivity of the fluids, and (3) the place of production of the first-order microphonics. Békésy describes an automatic apparatus to push a very sharp search electrode through the cochlear partition of an anaesthetized guinea pig. The ac and dc potentials of this perforating electrode were recorded as sound was applied. The endolymph was shown to be surrounded by an electrically insulating layer with protection for the organ of Corti from external electrical potentials. The microphonics were of larger value inside the endolymph than in perilymph or near the round window, and of largest value near the round window and near the organ of Corti. (*F.M.L.*)

Brahm, K. Elektroakustische Untersuchungen der Zischlaute bei Kranken mit Sigmatismus und doppelseitiger Unnenohrschwerhorigkeit. *Folia phoniatr., Basel*, 5, 1953, 1-11.

'The sounds Ss, Z and frontal Ch, as spoken by two patients suffering from addental and adental-lateral sigmatism respectively, and also from bilateral inner ear deafness were investigated by means of the Siemens spectrometer. A comparison of the results with those obtained in the an-

alysis of the normal sibilants revealed a distortion in favour of the lower frequencies up to 750 cycles per sec., whilst the higher ranges of formants showed only small amplitudes, but were . . . not entirely absent. The appreciable smaller amplitudes in the frequencies upwards from 750 cycles per sec. tallied with the audiograms of both patients, which revealed a hearing loss of 50 decibels. It was thus possible to demonstrate objectively the connection between the faulty auditory image of the sounds Ss, Z and Ch, and the faulty articulation of these sounds, resulting from it.' (*A.J.B.*)

LEWY, A., SHAPIRO, S. L. AND LESHIN, N. Functional examination of hearing. *Arch. Otolaryng., Chicago*, 56, 1952, 61-91.

Bibliographic materials on hearing function published in 1950 and 1951 are summarized. (*F.M.L.*)

REGER, S. N. A clinical and research version of the Békésy audiometer. *Laryngoscope*, 62, 1952, 1333-1351.

The clinical and research applications of the Békésy audiometer are discussed. Mechanical construction details are given of the author's version of the Békésy instrument. (*F.M.L.*)

RICHMOND, J. B., GROSSMAN, H. J. AND LUSTMAN, S. L. Hearing test for newborn infants. *J. Pediat.*, 11, 1953, 634-638.

This report presents the results of 292 observations of 46 newborn infants. The authors found that the palpebral and/or startle responses to a calibrated percussion 'cowbell' while the infant was quiet or in light sleep are reliable as a screening test for gross sensitivity to sound. It is suggested that the test be made a part of the physical examination in the newborn nursery. (*S.O.R.*)

DURANT, D. AND H. MURPHY. Auditory discrimination training is important. *Educ. Dig.*, 19, 1953, 14-15.

It has been found that the ability to distinguish the separate sounds in spoken words is an important factor in a child's success in learning to read. Studies of the merit of ear training exercises to develop this ability indicate that those students especially low in auditory analysis profit particularly by such training. Ear training combined with visual discrimination practice gave the best results. (*L.L.H.*)

MYKLEBUST, H. R. Towards a new understanding of the deaf child. *Amer. Ann. Deaf*, 98, 1953, 345-357.

In the past, deafness and its implications have been considered too narrowly. Language and speech have been considered ends, not means to an end. Hearing is an all-directional distance sense keeping the individual in contact with the total environment. The deaf have difficulty understanding the real world and suffer a significant and consequential sensory deprivation. The deaf person perceives differently, his personality adjustment and behavior are also different. Quotations from research indicate that deaf children are poorer in certain motor functioning, have poorer vision, have qualitative intellectual differences, are somewhat retarded socially, have more difficulty interpreting visual experiences (perception), have marked difficulties in adjustment and the earlier the loss the greater the difficulty. Schools for the deaf must provide programs of psychotherapy, perceptual training, and social adjustment. (*A.J.B.*)

Panel on publication and public relations. *Amer. Ann. Deaf*, 98, 1953, 358-388.

Dr. D. T. Cloud, presided. Each panel member spoke about problems in his area of education of the deaf commonly misunderstood by the public: I. Parents of deaf children, H. Montague; II. Classroom Teacher, L. Crosby; III. School Administrator, R. M. Stelle; IV. Higher Education, L. M. Elstad; V. Adult Deaf, J. N. Orman; VI. Vocational Rehabilitation, B. R. Williams; VII. Research, R. G. Brill. (*A.J.B.*)

ROSS, G. Testing intelligence and maturity of deaf children. *J. except. Child.*, 20, 1953, 23-24, 42.

To determine their relative effectiveness for use with deaf children, three tests were compared—the Ontario School Ability Examination, the Nebraska Test of Learning Aptitude (the Hiskey), and the Vineland Social Maturity Scale. An initial group of 61 deaf children between the ages of three and ten years, six months were tested. The

conclusions of the study are based on data from 36 of these children. The Vineland correlated .91 with the Ontario and .85 with the Nebraska. The author feels that the Vineland Scale of Social Maturity is as satisfactory as either of the mental tests. (*J.V.F.*)

WERTHEIMER, M. Variability in audiometry. *Nat. Hearing Aid J.*, 6, 1953, 4-5.

Author reviews contributions of Sivian and White, Munson and White, Bachrack, and Myers and Harris to knowledge of variability in audiometry. Implications are suggested. (*F.M.L.*)

CURRY, E. T. Analysis of hearing loss patterns in a rural Illinois school system. *Arch. Otolaryng., Chicago*, 56, 1952, 361-371.

A majority of audiometric thresholds obtained in the fall were lower than those earlier obtained in the spring from the same group of rural Illinois school children. Children who did not receive medical treatment showed the same amount of improvement in audiometric thresholds as children who did receive treatment. The proportion of thresholds showing improvement was similar for both sexes. (*F.M.L.*)

FOWLER, E. P., SR. I scare was sure I heard you. *Trans. Amer. Acad. Ophthal. Otolaryng.*, 57, 1953, 346-355.

The author tells the story of the birth and growth of the work of the organizations for the hard of hearing and presents a short discussion of the phylogenesis of the ear, hearing in general and the philosophy of aural rehabilitation. (*S.O.R.*)

SMITH, M. AND WILSON, E. A model of the auditory threshold and its application to the problem of the multiple observer. *Psych. Monogr.*, 67, 1953, 1-35.

The purpose of the authors is to derive a mathematical theory to predict the responses of multiple observers to tones of varying signal strength. Included are the variation and correlations between observers, and the implications and consequences of responses to no signal (false report).

Twenty-three groups of five observers each listened to a tone of 800 cps masked by a broad-band noise for .41 seconds. Twelve groups were instructed to indicate they heard the tone only when they were quite certain (conservative). Eleven groups indicated when they thought they heard the tone (liberal).

Group results indicated that all fluctuations in noise affected all observers to some extent. This was independent of signal strength in the conservative group, but with the liberal group, the correlation between observers was a function of signal strength. Analysis of individual variability indicated that since both external and internal noise were independent of attitude, cut-off variability was the only source of difference. The liberal group was more sensitive to signals although allowed to make more false reports, while the conservative group transmitted more information. The gains of groups were slight over individuals in false reports, but were greater for stronger signals. At the 95% level, the group was only 2 db better than an individual. (*V.B.C.*)

NEWTON, L., KINKADE, J. M. AND CRUTHIRDS, A. E. Conservation of hearing. *Trans. Amer. Acad. Ophthal. Otolaryng.*, 57, 1953, 334-346.

The conservation of hearing program in the State of Arizona developed over the past 5 years is discussed in three articles: 'How to Develop a Hearing Conservation Program'; 'How to Organize Your State Medical Association for a Conservation of Hearing Program'; and 'Description of the Educational Follow-up in a Conservation of Hearing Program.' (*S.O.R.*)

TAYLOR, S. D. Education of the deaf in England. *Amer. Ann. Deaf*, 98, 1953, 240-248.

A review of the procedures and facilities for the education of acoustically handicapped children in England. It includes: principles of classification (primarily on an educational basis), placement in regular and special schools, teachers' organizations and special publications, teacher training, salaries and responsibilities, use of oral and manual methods. (*A.J.B.*)

BRILL, R. G. AND ORMAN, J. N. An experiment in the training of deaf children in memory for sentences. *Amer. Ann. Deaf*, 98, 1953, 270-279.

The authors conclude that deaf children's memory for sentences containing more than

four or five words is not the equivalent of hearing children's sentence memory. A period of training resulted in temporary improvement in sentence memory, bringing the deaf children's performance quantitatively—but not qualitatively—to the level of the hearing children. The authors believe that although specific training can improve sentence memory skill, 'real and lasting improvement seems to be influenced by other educational factors.' (*A.J.B.*)

Education of the deaf today—An assessment and a look into the future. *Volta Rev.*, *55*, 1953, 187-207.

A panel discussion by an otologist, audiologist, psychologist, teacher of the deaf, superintendent of a residential school and a parent of a deaf child; S. Richard Silverman, moderator. (*A.J.B.*)

Gaskill, P. The educational guidance of school children with defective hearing. *Brit. J. educ. Psychol.*, 23, 1953, 138-141.

A summary of an M.E. thesis which consisted of a survey of the intelligence and educational achievement of deaf and partially deaf children in the British Isles. Three tables are included. (*D.C.S.*)

Glowatsky, E. The verbal element in the intelligence scores of congenitally deaf and hard of hearing children. *Amer. Ann. Deaf*, 98, 1953, 328-335.

Twenty-four hearing handicapped children were tested with the Wechsler Intelligence Scale for Children, the Grace Arthur Performance Scale and the Goodenough Draw-A-Man test. The verbal element in these tests was studied with respect to (1) sex differences; (2) effect of bilingualism; (3) differences between deaf and hard of hearing subjects. No differences were noted between the means for the sexes or the groups of deaf and hard of hearing. The mean on the verbal scale of the WISC was significantly lower than the means on the other tests. (*A.J.B.*)

Kavruch, S. The performance of deaf trainee laboratory mechanics on aptitude tests. *Amer. Ann. Deaf*, 98, 1953, 324-326.

Report of a study to determine the feasibility of applying four aptitude tests to use with the deaf. Five deaf subjects used. Results correlated with job performance. (*A.J.B.*)

Meyer, M. The traditional formulas for pitches created in the cochlea. *Amer. J. Psychol.*, 66, 1953, 306-309.

The author presents three formulas extensively cited in the literature. He reports his experimental testing indicates these formulas do not explain how the cochlea functions mechanically. The author suggests the use of hydraulic theory of cochlear mechanics. (*V.B.C.*)

Sambataro, C. and Pestalozza, G. Masking and fatigue effect of white noise in connection with speech tests. *Laryngoscope*, 62, 1952, 1197-1204.

Masking and fatigue effects of white noise on articulation curves for logatomes were studied. Perception thresholds shifted less for low intensity masking than for high levels. After exposure to 60 db or 80 db of continuous white noise for 15 minutes, no change was found in the articulation curve. (*F.M.L.*)

Froeschels, E. Some important links between logopedics and otolaryngology. *Folia phoniatr., Basel*, 4, 1952, 1-8.

Three subjects are discussed: Often misnamed hyper-functional troubles of the voice and eight places they may be localized; the chewing method, its relationship to the development of speech and fast curing effect on functional voice problems; a bloodless treatment for Recurrens-Paralysis of larynx consisting of 'pushing exercises.' (*A.J.B.*)

Luchsinger, R. Physiologie der Stimme. *Folia phoniatr., Basel*, 5, 1953, 58-127.

'Recent developments in the field of voice physiology are discussed and summarized. Differential diagnosis of the consumption per second of breath volume and of vocal intensity in singing is considered to be of particular importance. For exact diagnosis of movements of the vocal cords, phoniatrists and phoneticians today make use of the electron stroboscope and slow-motion film apparatus.'

'Modern technical science has brought numerous advances, apart from the X-ray tomogram, to phoniatrics. It is understand-

able that under the guidance of acousticians the earlier picture of voice production as a purely peripheral process has been found to be no longer acceptable to modern conceptions.' (*A.J.B.*)

SCHILLING, R. Ein Beitrag zur Persönlichkeitsgestaltung des Erziehers. *Folia phoniatr., Basel*, 4, 1952, 113-130.

'Taking the predominately optic-motor disposition of man as a point of departure, the author emphasizes the importance of the personality expressed in the speech and voice of the teacher for the child and endeavors to show the best ways for its optimal use. . . . The problem of intonation is explained on the basis of recent research in the physiology of voice.' (*A.J.B.*)

GOLDBERG, M. W. Partial dentures for cleft palate patient. *Dent. Surv.*, 29, 1953, 1156-1158.

A detailed description of structuring a prosthetic appliance to the specific needs of the patient. Many natural teeth were preserved by fitting acrylic teeth in front of them, thus improving the appearance of a narrow upper arch. Speech was reported as tremendously improved. (*G.H.S.*)

HENRIQUES, A. C. The growth of the palate and the growth of the face during the period of the changing dentition. *Amer. J. Orthodon.*, 39, 1953, 836-857.

Describes methods of measuring various dimensions in oral cavity suggesting that various dental eruptions are related to growth patterns in the palate. (*G.H.S.*)

COOPER, H. K. Integration of services in the treatment of cleft lip and cleft palate. *J. Amer. dent. Ass.*, 47, 1953, 27-32.

Cleft lip and palate is a public health problem and should be handled similarly to other handicapping conditions. Its treatment and rehabilitation requires the coordinated services of several specialists within the professions of dentistry, medicine, psychology and speech therapy. (*G.H.S.*)

BAY, E. Der gegenwärtige Stand der Aphasieforschung. *Folia phoniatr., Basel*, 4, 1952, 9-29.

'In the classical epoch of brain pathology the single, supposedly simple, partial verbal performances were attributed to certain regions of the brain in a rather static manner; the particularities of the individual cases were then explained on the basic of anatomical findings.' The newer research tends toward a functionally and dynamically oriented holistic conception, 'corresponding to which every verbal performance depends on numerous factors; all of these have to be taken into consideration when assessing the disturbances of function underlying the aphasia.' (*A.J.B.*)

GOODY, W. AND M. REINHOLD. Some aspects of human orientation in space. *Brain*, 76, 1953, 337-363.

The authors present an hypothesis for a dynamic concept of nervous activity. They specifically are concerned with visual perception as the integration and organization of motion patterns. These possess directionality which is stated to be essential for spatial orientation, reading, writing, drawing, and calculating. Three cases are presented to illustrate disturbances in executing spatial functions. (*V.B.C.*)

ARTLEY, A. S. Oral language growth and reading ability. *Elem. Sch. J.*, 53, 1953, 321-327.

There is a close relationship between linguistic factors and reading ability too often overlooked. Too often children cannot understand the spoken word or express themselves as well as they should if they are to read and understand their school work. Oral language growth should be considered a requisite to reading. The following areas of growth have been found important: (1) developing awareness of oral words as language units; (2) enriching oral vocabulary; (3) strengthening meaning associations; (4) formulating sentences; (5) organizing ideas into language units; (6) using narrative expression; (7) improving articulation; (8) developing sensitivity to inflectional variants; and (9) developing awareness of sentence structure. (*L.L.H.*)

KOEHLER, O. 'Wolfskinder,' Affen im Haus und Vergleichende Verhaltensforschung. *Folia phoniatr., Basel*, 4, 1952, 29-53.

'Corresponding to the actual standpoint of the comparative research on the behavior of man and animal, we can strictly homologize (1) all senses, (2) along with the physiology of stimuli, (3) especially the locomotor automatisms of central origin . . ., (4) the modalities of orientation in space and time, (5) the instincts . . ., (6) the motivations (drives), (7) the effects, (8)

the innate releasing-mechanisms, (9) the learning capacity in all its levels, (10) the pre-verbal thinking, (11) the domestication. . . . Man developed language first by naming his animal-like pre-verbal thought elements. . . . The small child, especially if retarded in speech, developes his understanding of words along the same phases as e.g. the dog and the monkey.' (*A.J.B.*)

FEARING, F. Toward a psychological theory of human communication. *J. Personality*, 22, 1953, 71-88.

Communication behavior is viewed in the context of personality-perceptual theory. Specific dynamic relationships between the speaker and the listener are hypothesized. (*D.C.S.*)

REUSCH, J. Synopsis of the theory of human communication. *Psychiatry*, 16, 1953, 215-243.

A discussion of the role played by the social situation; information, language, codification; communications about communication; and feed back and correction in a theory of communication. (*D.C.S.*)

GARDE, E. J. Apports de l'experimentation clinique, pathologique et therapeutique a la connaissance des niveaux encephaliques d'integration de la fonction phonatoire. *Folia phoniatr., Basel*, 4, 1952, 133-146.

'The author reviews a number of clinical, experimental, pathological and therapeutic facts that affirm the existence of cerebral levels in the integration of the vocal function, conjointly with the physiology of the auditory nerve, of the vagus and of the parasympathetic system. He shows that the regulation of the pitch of the sounds in singing pertains to the cortical level, and that vocal integration by the auditory cortex can be eliminated or reduced even without deafness. The diencephalic integration can be safely surmised on the basis of the repercussion of emotional and endocrinological circumstances on the voice. Moreover, the author emphasizes the reflectory relations on the bulbar level . . . between hearing and phonation (cochleorecurrential reflex). He describes the syndrom of fatigue of the speaking voice of bulbar origin and, on the basis of an observation during prostigmine therapy he emphasizes the visceral aspects of the vocal function of the larynx.' (*A.J.B.*)

HULTZEN, L. S. Communication in linguistics. *Amer. Speech*, 28, 1953, 3-11.

Contemporary writings in linguistics are cited to show avoidable obscurity in literary style and in use of symbols in transcriptions. (*J.J.V.*)

MOLES, A. Comment peut-on 'mesurer' le message parle? *Folia phoniatr., Basel*, 4, 1952, 169-198.

The global information given by our verbal communication may be divided into two classes: the semantic information (intellectual material) and the aesthetic information. There are some methods for separating these two classes. Measuring the spoken messages is difficult, but some of the features may be attained by: statistical study (rate, dynamics, distribution of intensities), morphological study of the structure, including the spectral content (vowels) and shape of the phoneme (related to old concept of consonants). The author describes an apparatus which permits the delimiting of the variable parts of speech. (*A.J.B.*)

HOWELL, M. D. Influence of emotional tension on speed of reaction and movement. *Res. Quart.*, 24, 1953, 22-32.

Fifty male subjects were tested for speed of motor response in a laboratory situation in which they were made emotionally tense by a heavy electric shock. In addition, measures of breathing rate, systolic and diastolic pressures, pulse rate, and electrical skin resistance were taken as possible physiological correlates of emotional tension. (*D.C.S.*)

KIRKNER, F. J., R. M. DORCUS AND G. SEACAT. Hypnotic motivation of vocalization in an organic motor aphasic case. *J. clin. exper. Hypnosis*, 1, 1953, 47-49.

A 41-year-old male patient with a history of mutism with organic implications failed to respond to speech retraining efforts. Comprehension was good and motivation poor. With the aid of hypnosis, the patient was motivated to vocalize. Following vocalization, oral speech retraining progress was steady. (*H.M.*)

SCHNECK, J. M. A hypnosis verbal library for purposes of instruction. *Brit. J. med. Hypnotism*, 4, 1953, 20-21.

The writer discusses a special library of Soundscriber discs which he uses in teaching hypnotherapy to clinicians. The recordings are of special value because they provide insight into intonation, timing of speech, etc., which cannot be readily gained from reading textbooks on hypnotherapy. (*H.M.*)

SYMONDS, P. M. Studying the individual through projective techniques. *Educ. Dig.*, 19, 1953, 27-29.

This is a discussion of the value to schools of projective techniques for the study of personality of students, especially those with emotional problems. Such tests would enable the school to better understand these students and to more effectively guide their growth and learning. The problem is providing the services necessary to carry on a testing program in the schools. One solution would be for members of the Educational Records Bureau to go to the various schools to administer projective techniques and other clinical tests to pupils the school would like to better understand. (*L.L.H.*)

FROESCHELS, E. Chewing method as therapy. *Arch. Otolaryng., Chicago*, 56, 1952, 427-434.

The author explains his philosophy underlying the chewing method and its application to voice disorders. (*F.M.L.*)

SPILKA, B., T. HANLEY AND M. STEER. Personality traits and speaking intelligibility. *J. abnorm. soc. Psychol.*, 48, 1953, 593-595.

This study attempted to measure the relationship of speaking intelligibility over high-level noise and certain personality traits. The highest intelligibility was found in individuals described as highly aggresive, 'who, when interfered with, may react in an over compensating manner which would be directed toward rapidly and forcibly subduing all opposition.'

In a second study done with 63 subjects the authors found higher intelligibility might be found in more stable, confident, responsible individuals. They conclude the possibility of chance occurrence in the significant findings and suggest a repetition to test stability-reliability and the validity of measures and concepts. (*V.B.C.*)

TROJAN, F. Experimentelle Untersuchungen uber den Zusammenhang zwischen dem Ausdruck der Sprechstimme und dem vegetativen Nervensystem. *Folia phoniatr., Basel*, 4, 1952, 65-92.

'The author undertook to back up experimentally his theory on the expressional values of the speaking voice by three series of investigation. In way of simplification, conceptions of the "sparing" and potent voice were used; within this theory they correspond to the opposite extremes of vegetative rhythm and are sharply characterized as to their phonetic differences. Measurements with the interferometer showed that the consumption of oxygen even in inner speech sharply diminishes (almost invariably) in the phase of sparing voice and invariably rises in the phase of the potent voice. Pupillometric observations and flash-photos reveal that the pupils contract with the sparing voice and dilate when potent voice is used. The electrodermographic measurements are in good keeping with the results of the other two investigations.' (*A.J.B.*)

WINCKEL, F. Electroakustische Untersuchungen an der menschlichen Stimme. *Folia phoniatr., Basel*, 4, 1952, 93-113.

By means of new experimental equipment, 600 healthy male voice spectra were studied. The number of partials was the essential criterion. Exemplary stage voices average about 10 partials in the middle range. This leads to new conclusions about the technique of voice production, voice disturbances and the structure of esophageal voice. (*A.J.B.*)

BEEM, H. Educational news and editorial comment—research on exceptional children. *Elem. Sch. J.*, 54, 1953, 7-9.

Research to find what can and should be done for exceptional children has not kept pace with services established for these children. There is a need for research to determine what help other than medical or psychological, they would most profit by.

The Institute for Research on Exceptional Children at the University of Illinois is planning a number of sociological studies and will disseminate their findings among

workers in this field. These studies include: (1) study of effect of extrinsic factors on the learning, motivation, adjustment and general development of deviating children; (2) study of effect of intrinsic factors of disability—motor, sensory, and mental—on the development and adjustment of the handicapped; and (3) graduate students' study of problems involved in these fields. (*L.L.H.*)

CRUICKSHANK, W. The multiply handicapped cerebral palsied child. *J. except. Child.*, 20, 1953, 16-22.

To aid in gaining a fuller understanding of the cerebral palsied child, a classification is made of eight distinct types of multiply handicapped cerebral palsied children. For this classification, the author considers the presence in the cerebral palsied child of (a) other physical defects of whatsoever kind or degree, (b) retarded mental development, and (c) psychopathological characteristics of perception which are independent of mental retardation. For each type, a number of comments are made about special problems and prognosis. (*J.V.F.*)

NELSON, O. W. An investigation of certain factors relating to the nature of children with functional defects of articulation. *J. educ. Res.*, 47, 1953, 211-216.

Thirty-five children (2.1%) were found to have functional disorders of articulation in a population from third, fifth and seventh grades. Compared with the general school population, this group showed no significant difference on the following items: intelligence, adjustment, regularity of attendance, health, and leisure time interests. The speech defectives showed less desirable behavior in teacher ratings, made poorer grades and averaged 12 months retardation by seventh grade. (*A.J.B.*)

MORRISSEY, A. AND ZIMMERMAN, J. Helps for the handicapped. *Amer. J. Nurs.*, 53, 1953, 454-456.

A description, with illustrations, of a number of self-help devices for use in eating, moving about and toileting. (*J.V.F.*)

LEVI, C. The Rorschach test in rehabilitation. *J. Rehabilit.*, 19, 1953, 13-15, 29.

'The greatest value of this test lies in its ability to provide an understanding of the personality structure.' It can be of help in psychiatric diagnosis, vocational guidance, and in advising the staff in the treatment of patients. Illustrative case histories are given. (*J.V.F.*)

WHITEHOUSE, F. Habilitation—concept and process. *J. Rehabilit.*, 19, 1953, 3-7.

Many young handicapped persons require habilitation rather than rehabilitation. They comprise a separate group which needs a different type of guidance program. A description of an 'average' habilitation client is given together with specific suggestions for the handling of such patients. (*J.V.F.*)

MACKIE, R. P. State standards for teaching our nation's 5,000,000 exceptional children. *Sch. Life*, 36, 1953, 8-10.

First article to report information from the Office of Education study, 'Qualifications and preparation of teachers of exceptional children.' More states (31) have established a credential for speech correction than for any other area of exceptionality. Next most frequent certificate (28 states) is for teachers of hard of hearing. (*A.J.B.*)

JOINT COMMITTEE OF NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS AND THE AMERICAN ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION AND RECREATION. The responsibilities of the school for health appraisal. *Educ. Dig.*, 19, 1953, 5-7. (Reprinted from *Bull. Nat. Ass. sec. Sch. Prin.*, May, 1953, 2-6.)

This article points out the need for school health appraisal programs to identify students with health problems or with remedial defects, such as loss of hearing, loss of sight, mental retardation, and speech defects, who may require modified programs of education. Schools should follow through with health counseling and guidance as outlined in the article. (*L.L.H.*)

VANDEBERG, E. Readiness for language arts begins in kindergarten. *Elem. Sch. J.*, 53, 1953, 447-453.

This is a discussion for teachers on preparing kindergarten children for the reading and speaking that will be expected of them in grade school. Among a number of factors discussed as being favorable are oral-language facility and auditory discrimination. A number of methods kindergarten teachers may use for developing these skills are listed. (*L.L.H.*)

The American Speech and Hearing Association

presents THE HONORS OF THE ASSOCIATION

to SARA STINCHFIELD HAWK

The Council of the American Speech and Hearing Association votes unanimously that: *the Honors of the Association for distinguished contribution to the field of speech and hearing be awarded to Dr. Sara Stinchfield Hawk, a statement of this award to be published in the March, 1954 issue of the* Journal of Speech and Hearing Disorders, *together with a portrait of Dr. Hawk and a summary of the achievement for which the award is granted.*

—The American Speech and Hearing Association, in convention at New York City, New York, November 24, 1953.

Contributions to Speech and Hearing

The professional life of Sara Stinchfield Hawk embraces the important and historic years of speech correction in America. To believe that speech correction was urgent, and significant, and to act upon this belief as early as 1909 required courage of mind and adventure of spirit. These Dr. Hawk possesses. Patterns for providing assistance to the speech handicapped had not yet been defined and the mechanisms for its application were not yet available. In a large measure the place of speech correction in special education was insured by the mature and scientific manner in which she approached and developed the methodology of clinical speech.

She wrote about speech disorders, and originated and described methods of treatment, when no journal represented the profession and there were no books of consequence in the field. As the first woman to be granted a Ph.D. degree with major emphasis in speech, her insistence that training be basic and comprehensive encouraged universities and colleges to develop course programs in this area. None has more earnestly and more sensitively applied herself to achieving the acceptance of the practice of speech correction by clinical psychologists, physicians, and specialists in education.

Her contacts with students on every level have been warm, understanding, encouraging, and democratic. She has given dignity and stature to a discipline and to a profession which were, until recent years, young, unsure, and often hesitant. Her advice and leadership have been essential to the Association's growth and recognition. She has represented speech pathology and clinical practice in many national health, welfare, and social agencies and movements, and has won for them a serious respect. To hundreds of persons in the Association and outside of it, Sara Stinchfield Hawk represents what is speech correction in its finest and deepest sense. The distinctions she has earned are a source of great encouragement to those who would be speech correctionists and of pride to those who are.

Biographical Summary

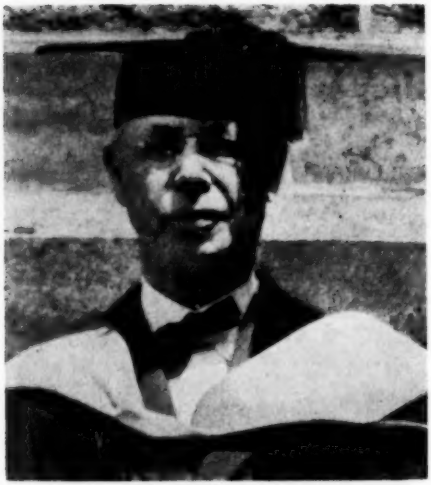
HAWK, SARA STINCHFIELD, speech pathologist; b. Auburn, Maine, 1885; m. Charles Lyle Hawk, 1932.

Dip., Curry Sch. of Express., 1909; B.A., Univ. Pittsburgh, 1914; M.A., State Univ. Iowa, 1920; Ph.D., Univ. Wisconsin, 1922.

Res. Assist., Iowa Child Welf. Res. Stat., 1918-1920; Assist. in Sp., Univ. Wisconsin, 1920-1922; Assoc. Prof. Psych., Mt. Holyoke Coll., 1922-1932; Lect., Univ. S. Calif., 1932-1944; Dir., Sp. Clin., Orthopedic Hosp., Los Angeles, 1933-1944; Part-time Psychol., Nursery Sch. for Visually Handicapped, Los Angeles, 1936-; Part-time Psychol., Polytechnic Elem. and Jr. H. S., Pasadena, 1939-1949; Sp. and Psychol. Consult., Cedars Development Sch., Ross, Calif., 1940-; Visiting Assoc. Prof. Psych., Scripps Coll., 1944-1950; Visiting Assist. Prof. Psych., Los Angeles St. Coll., 1952-1953; Dir., Sp. Clin., Casa Colina Hosp. for Crippled Children, 1952-.

Member, Amer. Sp. and Hearing Assoc. (Fellow, 1925; Sec., 1925-1930; Pres., 1939-1940; Hon. Life Member, 1950); Amer. Psychol. Assoc. (Fellow, 1926; Life Member, 1952); Calif. Psychol. Assoc.; S. Calif. Psychol. Assoc.; Psi Chi; Zeta Phi Eta; D.A.R.; Delta Delta Delta.

Author, *Psychology of Speech*, 1928; *Speech Pathology*, 1928; *Dictionary of Speech Terminology* (with Samuel D. Robbins and G. Oscar Russell) 1931; *Speech Disorders*, 1933; *Children with Delayed and Defective Speech* (with Edna Hill Young), 1938; *Speech Therapy for the Physically Handicapped*, 1950; numerous articles in professional journals.



The American Speech and Hearing Association

presents THE HONORS OF THE ASSOCIATION

to RAYMOND H. STETSON

The Council of the American Speech and Hearing Association votes unanimously that: *the Honors of the Association for distinguished contribution to the field of speech and hearing be awarded posthumously to Dr. Raymond H. Stetson, a statement of this award to be published in the March, 1954 issue of the* Journal of Speech and Hearing Disorders, *together with a portrait of Dr. Stetson and a summary of the achievement for which the award is granted.*

—The American Speech and Hearing Association, in convention at New York City, New York, November 24, 1953.

Contributions to Speech and Hearing

Raymond H. Stetson's basic contribution to the field of speech and hearing was his thorough recording and analysis of the movements which produce speech. He manifested a remarkable ingenuity in devising methods of pneumatic recording which he later supplemented with oscillographic techniques. He spent a lifetime formulating, demonstrating, and verifying the central hypothesis that the ultimate phonetic unit, the syllable, is produced by a rapid 'ballistic' chest pulse. He also clarified the phenomena of the accompanying concomitant movements of the articulatory apparatus and the cavity-shaping movements which differentiate them acoustically.

Doctor Stetson brought to his investigations a scalpel-like cosmopolitan intellect, a scientific experimental method, and an incredible indefatigability that kept him constantly advancing the frontiers of research in speech. His pioneering research in experimental phonetics and his interest in speech were natural developments of his earlier investigations of motor skills. He was both an experimental psychologist and phonetician, and by the turn of the century had developed a systematic framework for perception and learning. He approached all tasks with a deep humility and throughout his lifetime revealed a reverence for his fellow man. He nurtured scholarship and talent wherever he found them and provided opportunities for their growth and development. His eminence as a teacher attracted students from many places who came to study under him. On his retirement, his students presented him with a commemorative volume of papers prepared by them specifically for that occasion.

The work of Stetson will be a primary source when the ultimate description of the speech act is written. As person and teacher, he lives on in those whom he touched.

Biographical Summary

Stetson, Raymond Herbert, psychologist; b. North Ridgeville, Ohio, March 1, 1872; d. Oberlin, Ohio, December 4, 1950.

Ph.B., Oberlin College, 1893; M.A., 1896; Ph.D., Harvard University, 1901; Honorary Sc. D., Oberlin College, 1942.

Assistant in Chemistry, Oberlin College, 1893-1894; Professor of Zoology, Tabor College, 1896-1899; Professor of Psychology and Philosophy, Beloit College, 1904-1909; Head of the Department of Psychology, Oberlin College, 1909-1939; Professor Emeritus and Director of the Oscillograph Laboratory, 1939-1950.

Member, American Psychological Association (Fellow, 1912; Life Member, 1946); Linguistic Society of America; International Congress of Phonetic Sciences (member permanent council, 1932-1950); Phi Beta Kappa; Sigma Xi.

Author, *Motor Phonetics*, 1928, Second edition, 1951; *Bases of Phonology*, 1945; numerous articles in professional journals.

MARGARET HALL POWERS

President

The American Speech and Hearing Association

News And Announcements

The University of Georgia has inaugurated a speech correction curriculum area under the joint sponsorship of the College of Arts and Sciences and the College of Education. The area will be responsible for developing a training curriculum, conducting research, providing services, and acting as consultant for the State and Southeast. Stanley Ainsworth is chairman of the area which is part of the program for the education of exceptional children that has been recently approved by the University.

Doubleday & Company, Inc. have announced the development of a Doubleday Publications in Speech series and have appointed Jon Eisenson as the Consulting Editor.

The University of Delaware has been awarded a contract by the RCA Victor Division, Radio Corporation of America, to conduct a research program in the field of psychoacoustics. The purpose of the research program is to provide basic information concerning the factors which contribute to understanding of speech and to develop reliable techniques for decreasing the difficulty of speech reception under various conditions. The contract provides for the construction of a special soundproof laboratory.

The Department of Speech of the University of Illinois at Urbana has opened new quarters for the University Hearing Center on the third floor of Illini Hall. Hearing aid contracts are maintained with the Veterans' Administration, Division of Services for Crippled Children, and the Vocational Rehabilitation Administration. E. Thayer Curry is Director of the Center, James C. Kelly is in charge of Hearing Aid Evaluations, and George Falconer is in charge of Aural Rehabilitation.

A non-profit foundation established for the purpose of assisting worthy projects in psychological education and research has been incorporated as a sister organization of the American Psychological Association. The new group is known as the American Psychological Foundation. The Foundation's principal offices will be in the new building at 1333 16th St., N.W., Washington 6, D. C., recently purchased by the American Psychological Association.

The American Hearing Society will sponsor the twenty-sixth annual observance of National Hearing Week, May 2-8, 1954. The Society, which inaugurated the observance, offers materials and help to those planning programs and displays during National Hearing Week.

The Hearing and Speech Center at Syracuse University announces that a six-week Summer Residence School for children with speech and hearing problems will be offered during the coming summer.

During its recent spot survey, the Arizona Society for Crippled Children and Adults discovered over 2,500 unserviced children with speech problems. During this year the Society's speech consultant, Lynne Davis, has been conducting special education workshops in the larger school systems in the state. Since speech correction is available in only three areas in the state, it is expected that the new program will pave the way for the incorporation of speech correction in several school systems.

A program of research on factors important in learning to speak a foreign language is in progress at Syracuse University. Albert J. George, head of the Romance

News and Announcements is edited by Charles R. Elliott, Northwestern University, assisted by the following committee: Jane Beasley, University of Alabama; George Gens, Newark (New Jersey) State Teachers College; Elise Hahn, University of California at Los Angeles; Earl Schubert, State University of Iowa.

Languages Department, and Louis M. DiCarlo, executive director of the Hearing and Speech Center, are leading the program.

Therapy for the stutterer will be emphasized in the offerings of Northwestern University for the coming summer. A residential program for adult stutterers and a day program for young stutterers and parents of stutterers will be utilized for demonstration and clinical experience. A symposium on Therapy for the Stutterer will feature authorities, among whom will be Wendell Johnson, Lee Edward Travis, and Charles Van Riper, and a graduate program will offer advanced experience in clinical and research problems. A series of special sessions will deal with the stutterer in the schools.

The fourteenth annual Parent Institute of the Nursery School of the Michigan School for the Deaf will be held in Flint, Michigan, March 28 through April 3, 1954. Among the featured speakers will be Jon Eisenson who will discuss Speech—Its Development and Functions in the Child

Temple University Speech and Hearing Clinic announces its affiliation with St. Christopher's Hospital for Children, in Philadelphia. Murray H. Halfond will be in charge of the diagnostic and therapeutic service at the Hospital and qualified students will participate in the program.

A training program for teachers of speech correction has been developed by Emory University in cooperation with the Junior League of Atlanta, Georgia. A full curriculum of training is provided within the program and a description is available from The Junior League School for Speech Correction, Inc., Atlanta, Georgia.

A Human Engineering Section has been established in the Office of Naval Research in Washington as the result of a recent study of the current activity in this field in the Navy. One important disclosure of the study is the fact that only seven per cent of all Navy man-machine systems which require human engineering attention are receiving it, owing partly to the gap that exists between research and the application of results to equipment design.

As of November, 1953, the Pennsylvania State College has been redesignated The Pennsylvania State University. The Speech and Hearing Clinic is under the Schools of Liberal Arts and Education.

A new course entitled Training Parents to Help Their Children in Speech Correction has been initiated by Mary Lennon, in charge of speech correction, in Kearny, N.J.

On March 27, 1954, at Rutgers University, the New Jersey Conference on the Handicapped will sponsor a one-day institute on the handicapped. Romaine Mackie will be the featured speaker in the morning. During the afternoon there will be 15 workshops in areas of the handicapped. George W. Gens will chair the workshop on speech pathology.

Mme. Vijaya Laksmi Pandit, President of the U. N. General Assembly, was the featured speaker at the dedication of the new treatment building of the Henry H. Kessler Institute for Rehabilitation in West Orange, N. J. The new building will offer complete facilities for physical therapy, occupational therapy, and speech therapy.

The Department of Corrections announced that the Reformatory Division at Lorton, Virginia is conducting a class in speech correction and therapy for students that include the problems of stuttering and cleft palate as well as articulatory problems.

Charles M. Jochem, Director of the Trenton School for the Deaf, has just completed a state-wide survey for the New Jersey Department of Education on the number of educable handicapped school children in New Jersey.

Meetings Announced

American Speech and Hearing Association, October 25-27, Hotel Jefferson, St. Louis.

Speech Association of America, during week of December 26, Conrad Hilton Hotel, Chicago; Week of December 26, 1955, Hotel Statler, Los Angeles.

Regional Speech Meetings: Eastern, April 8-10, Penn-Sherwood Hotel, Philadelphia; March 31-April 2, 1955, Hotel Statler, New York City. Southern, March 29-April 3,

Dallas, Texas; first week of April, 1955, Memphis, Tennessee. Western, late November, time and place to be announced; Central, April 2-3, Hotel Sherman, Chicago; April 1-2, 1955, Hotel Jefferson, St. Louis.

American Association for Cleft Palate Rehabilitation, May 14-15, Webster Hall Hotel, Pittsburgh.

Acoustical Society of America, spring meeting, June 23-26, Hotel Statler, New York City.

International Council for Exceptional Children, April 28 and following, Netherland Plaza Hotel, Cincinnati, Ohio.

American Psychological Association, September 3-8, New York City.

New Materials

Tape and Film Recording is a new magazine to cover all phases of magnetic recording, which made its debut with a November-December issue. Published by Mooney-Rowan Publications, Severna Park, Maryland, it will be issued six times for $2.00 per year.

Voicespondence is a new club for correspondence around the world by the use of magnetic recorders. Secretary of the club is John W. Schirmer, 1614 North Mango Avenue, Chicago 39, Illinois.

The annual, up to date, listing of quick facts on magnetic tape recorders is published in the September issue of *Audio Record*, available gratis from Audio Devices, Inc., 444 Madison Avenue, New York 22.

The Journal of Counseling Psychology will appear in 1954, $6.00 for four issues a year. It will emphasize research and systematic reviews of areas in counseling. Publication office: Dr. Frank M. Fletcher, Room 2, Old Armory, Ohio State University, Columbus 10, Ohio.

Copies of two regional papers in speech correction have been received. A discussion of all phases of the hearing aid program is featured in *The Cincinnati Speech Reader*, Cincinnati Council for Aid to the Deaf Child, Inc., 1140 Clearbrook Drive, Cincinnati 29, Ohio. News and announcements of West Coast speech correction and audiology circles is featured in *The Voice*, newsletter of the California Speech Therapy Association. Editor is Margaret Ropolo, 690 South Lincoln Ave., Monterey Park, California.

The Clark Picture Phonetic Inventory, on a 110-point scale, has been devised for use with pupils who cannot read. It tests most sounds in all three positions, plus diphthongs, vowels, and the consonant blends of *l*, *r*, and *s*. Black on white line drawings and presented on cards approximately three by four inches square. The test, devised by Ruth M. Clark, is distributed by Communication Foundation, Ltd., Box 8865, University Park Station, Denver 10, Colorado.

The Department of Education, Columbus, Ohio has issued a booklet, The Ohio Plan for Children with Speech and Hearing Problems, to describe its recommendations, standards, and teacher qualifications for speech and hearing therapists in Ohio.

University Microfilms, Ann Arbor, Michigan, announces the following microfilms are available, and perhaps of interest to speech and hearing therapists: John R. Thurston, An Empirical Investigation of the Loss of Spelling Ability in Dysphasics, Ph.D., State Univ. of Iowa, 1953, 75 pp., microfilm #5500, $1.00; Irwon Brown, Abstract and Concrete Behaviour of Dysphasic Patients on the Goldstein-Scheer Tests, Ph.D., Univ. of Michigan, 1953, 149 pp., microfilm #5644, $1.86; H. C. Armstrong, The Relationship of the Auditory and Visual Vocabularies of Children, Ph.D., Stanford Univ., 1953, 148 pp., microfilm #5779, $1.85.

Two new audiometers are being produced by U. S. Recording Co., 1121 Vermont Avenue, N.W., Washington 5, D. C. A model A-500 pure tone screening audiometer offers a small desk-top screening audiometer, and model SA-101 offers a recorded-speech audiometer for threshold and speech discrimination testing. Both models meet A.M.A. specifications.

Graduate Assistantships, Fellowships and Scholarships

This section, an annual feature of the December issue, lists part-time graduate appointments, fellowships, and scholarships specifically designated for graduate work in

speech and hearing. General university fellowships and scholarships, unspecified as to area of concentration, and full time graduate positions will not be included. Only those announcements received too late for the December issue are printed in other issues.

Copy should be submitted to the News and Announcements Editor, and should include formal title of appointment, institution, and unit; dates, general duties, and remuneration; name and address of persons receiving applications. Deadline for receiving copy is two months prior to the publication date.

Assistantships. University of Minnesota. Audiology Clinic, Department of Audiology. Starting January, March, July or September. Half time; 20 hours per week. $1,300 for nine months or eleven months. Students expected to enroll for one-half course load. Address Frank M. Lassman, Division of Otolaryngology, University of Minnesota, Minneapolis, Minnesota.

Training Fellowships. The Bill Wilkerson Hearing and Speech Center and Division of Audiology and Speech, Vanderbilt University School of Medicine. Starting September. $1,800-$2,000 for 12 months. Student must enroll for graduate work leading to M.S. degree in Division of Audiology and Speech. Address Forrest M. Hull, The Bill Wilkerson Hearing and Speech Center, 2109 Garland Avenue, Nashville 5, Tennessee.

Scholarships. Emory University and Junior League School for Speech Correction. Tuition grants of $700-$875 for graduate study leading to M.A. in psychology or M.Ed. at Emory University. Apply by July 1 for succeeding academic year. Address Education Committee, Junior League School for Speech Correction, Inc., 2020 Peachtree Road, N.W., Atlanta, Georgia.

Scholarship. American Hearing Society Kenfield Memorial Scholarship. Awarded annually to a prospective teacher of lipreading. Application blanks and further information may be obtained from the Society's national headquarters, 817 14 Street N.W., Washington 5, D. C. Deadline for application return is May 1.

News about People

Cornelius P. Goetzinger has been named Assistant Professor in charge of Audiology in the department of Hearing and Speech at the University of Kansas Medical Center.

Harriet Dorain has been added as a teacher in the preschool for the deaf at the University of Kansas.

Franklyn Elliott has accepted an appointment as Director of the Speech Therapy Center at Adelphi College, Garden City, New York.

Benjamin Jaques has been appointed as a Consultant in Speech Pathology and in charge of the Intensive Stuttering Program at St. Luke's Hospital in Chicago. Beverly Means Briggs has been appointed speech therapist and assistant audiologist at St. Luke's.

Richard Schiefelbusch has been advanced to Associate Professor at the University of Kansas and is to direct the new Speech and Hearing Clinics program developed by the Kansas Department of Special Education.

Henrietta L. Schotland has been appointed Instructor in Speech and Speech Therapist at Temple University and at St. Christopher's Hospital for Children in Philadelphia.

Matthew Rigler has been appointed Director of the Speech Clinic at the University of Illinois, Chicago Undergraduate Division.

Warren J. Clark has been appointed Director of the Hearing and Adult Speech Center of the University of Denver.

Isabelle Cooper has joined the staff of the Greenwich, Conn., Public Schools as a speech therapist.

Lois Nagy has been appointed Assistant Director of the speech clinic at the University of Oklahoma.

Don Bersinger has joined the staff of the University of Tulsa and Maybee Clinic in Tulsa, Oklahoma.

Hugo F. Schunhoff has accepted a position as Superintendent of the West Virginia Schools for the Deaf and the Blind in Romney, Virginia.

Milton Hill has been appointed as a therapist with the Pennsylvania Cleft Palate Division of the State Department of Public Welfare.

James McDonald has been appointed speech therapist for the Blair County Crippled Children's Society in Pennsylvania.

William Horean has been appointed speech therapist for the Williamsport Hospital, Cleft Palate Clinic, and Lycoming County Crippled Children's Society in Pennsylvania.

James F. Kavanagh has accepted a position as assistant professor of speech and Director of the Speech and Hearing Clinic at the University of South Dakota.

Harold Pufall has accepted a position as Assistant Director of the Speech and Hearing Clinic at Minot State Teachers College, North Dakota.

Gretchen Henry has joined the staff of the Wilmington, Del., public schools as a speech therapist.

Notice to Subscribers

Selected Bibliography on the Effects of High-Intensity Noise on Man by J. C. G. Loring, 38 pages, was issued in January, 1954 as Monograph Supplement 3 to the *Journal of Speech and Hearing Disorders*. Copies were mailed to all current Members and Associates of the American Speech and Hearing Association, publication costs being borne by Association dues. Other persons and agencies may secure this work from Business Manager George A. Kopp, Speech and Hearing Clinic, Wayne University, Detroit, Michigan, for 50c per copy.

Monograph Supplement 1, *The Effects of Noise on Man* by Karl D. Kryter, 95 pages, 1950, and Monograph Supplement 2, *A Guide to Audio-Visual Materials on Speech and Hearing Disorders* by Albert O. Weissberg, 86 pages, 1952, are still available at $1.00 per copy.

REPORT OF THE CONVENTION

American Speech and Hearing Association

NEW YORK CITY, NOVEMBER 22-25, 1953

The 547-page stenographic report and the copies of reports submitted by committee chairmen, which were not duplicated by the recorder, constitute the minutes of the 1953 Convention. These are on file in the office of the Secretary-Treasurer. The following abstract of the proceedings includes all matters of business introduced by motions during the Council and Business Meetings.

Council Meetings

November 22, 1953, 9:00 a.m.

Members present at this meeting were: S. Richard Silverman, presiding, Stanley Ainsworth, Ollie Backus, James A. Carrell, James F. Curtis, Myfanwy E. Chapman, Grant Fairbanks, Ernest H. Henrikson, George A. Kopp, Eugene T. McDonald, Gordon E. Peterson, Margaret Hall Powers, and Charles Van Riper.

President Silverman called the meeting to order, reminded the group of their large and gruelling agenda and expressed a wish that the remarks be relevant to the topics being discussed.

Minutes of the 1952 Convention. Kopp stated that the stenographic report and the copies of reports submitted by committee chairmen, which were not duplicated by the recorder, constituted the minutes of the 1952 Convention, and these were abstracted and published in the March 1953 *Journal.*

Moved by Henrikson and seconded by Backus that the 1952 minutes be approved. Passed.

Report of the President-Elect. Powers had no report to make at this time as President-Elect.

Report of the Vice-President. Powers presented the program of the Convention as her report and reviewed some of the problems encountered in program planning, including the extent to which contributed papers should be used and the extent to which the program ought to be built around topics.

Moved by McDonald and seconded by Kopp that the report be accepted. Passed.

Report of the Executive Vice-President. Henrikson's report was divided between his duties as Chairman of the Liaison Committee and the Committee on Time and Place, and a communication on the use of educational television from the American Council on Education which had been referred.

It was agreed by common consent that the President communicate the interest of the Council in educational television to the appropriate person.

Moved by Powers and seconded by Henrikson that a Committee, which would be considered a Sub-Committee to the Committee on Liaison, be appointed to cooperate with the American Psychological Association, the membership thereof to consist of two individuals who are members of both associations and two who are members only of this association, with some consideration of representatives of areas of interest of this association. Passed.

Moved by Powers and seconded by Backus that this pattern of sub-committee structure be recommended for future relationships with other professional associations. Passed.

Report of Committee on Time and Place. Henrikson presented a list of available hotels and open dates for the 1956 Convention in Chicago.

Moved by Fairbanks and seconded by Powers that the Executive Vice-President telephone the Conrad Hilton Hotel, confirm the 17-20 November dates and report back to the Council. Passed.

The Council instructed Henrikson to continue to investigate possible meeting places in the South for 1957. Peterson suggested the possibility of meeting in Baton Rouge in conjunction with Louisiana State University.

Report of Vice-President-Elect. Peterson requested the advice of the Council concerning the advisability of submitting a questionnaire to the Membership on program content and structure.

Moved by Fairbanks and seconded by Henrikson that the report be accepted and that a questionnaire be distributed to the Membership by mail. Passed.

Report of the Secretary-Treasurer. Kopp presented a report consisting of: a Balance Sheet of the Association as of June 30, 1953, the close of the fiscal year, showing a total asset figure $34,199.97; the Auditor's (Peat, Marwick, Mitchell & Co., Detroit) report dated September 14, 1953; a Balance Sheet as of October 31, 1953 showing the assets $34,574.10; an itemized statement of income and expenses for the period July 1, 1952 to June 30, 1953; a comparative statement of income and expenses for the past five years; and an inventory of the *Journal of Speech and Hearing Disorders.* (Extracts from this report are printed following these minutes.)

Moved by Fairbanks and seconded by Henrikson that the report be accepted. Passed.

Associate Dues. Fairbanks discussed the advisability of limiting the $4.00 per year dues for Associates to a period of five years and explained that this was the policy of other organizations.

Prepared by Fairbanks, moved by Peterson, and seconded by Backus that 'The dues of Associates, as established by the Membership according to the provisions of Article IV of the By-Laws, shall, when less than for Members, apply for the first five years of Associateship only, and shall be raised to equal the dues for Members beginning with the sixth year of Associateship; this schedule shall be first applied on 1 January 1955 to all present Associates who affiliated with the Association on or prior to 1 January 1950, and shall prevail thereafter; no Member may revert to Associate status and incur a reduction in dues.' Passed.

Report of the Editor. Fairbanks included in his report commendations for the services and team work of his staff, an expression of appreciation for the contributions of the University of Illinois through the offices of President George D. Stoddard and Professor Miodrag Muntyan, Director of the University Press, and an analysis of the material published during 1953. (This report is printed in full following these minutes.)

Moved by Kopp and seconded by Backus that the report be accepted. Passed.

Proposals for Amending the By-Laws in Respect to Managing the Publications of the Association. Fairbanks sketched very briefly the duties of the Editor as they obtain at present, making the point that the work involved was too great for one person to carry out efficiently and proposed that the By-Laws be amended to permit a sharing of responsibility. In effect, the proposals were to amend the appropriate Articles and Sections of the By-Laws to establish: (1) an office entitled Editor of the Association, (2) an office designated as Editor of the *Journal of Speech and Hearing Disorders,* and (3) a Committee on Publications. The discussion of the Council on this proposal covers eighty-three pages of the stenographic report of the Meetings. A summary of the presentation will be mailed to the Membership with the ballot on the proposed Amendment to the By-Laws.

Moved by Fairbanks and seconded by Backus that amendments with respect to the Association's publications, such as are set down in this instrument, be approved by the Executive Council. Passed.

A luncheon recess was taken during the Report of the Editor. Discussion continued on specific wording of certain proposed amendments.

Moved by Powers and seconded by Fairbanks that the three appointive members on the Committee on Publications be selected one each from the fields of speech disorders, hearing disorders, and basic speech and hearing science. Passed.

Journal of Speech and Hearing Research. Fairbanks stated that the Editorial Staff had been asked by the Council to study the matter of having a *Journal of Speech and Hearing Research* and that the Planning Committee had mentioned it in their report. He had no specific proposal to make, but thought there was insufficient evidence to warrant the establishment of the *Journal* at this time.

Moved by Backus and seconded by Curtis that a new *Journal* be published. Passed.

Moved by Powers and seconded by Henrikson that Section 3 of Article XII be added to the amendment to the By-Laws proposed above, with advancement of the

numbers of the subsequent Sections of this Article, listing the *Journal of Speech and Hearing Research* paralleling the wording of Section 2. Passed.

President Silverman disposed of other suggestions for changing the By-Laws in respect to the *Journal of Speech and Hearing Research* by requesting that they be reviewed and appropriate proposals made for revision.

Report of the Committee on Budget. Kopp presented an estimated budget for the fiscal year July 1, 1953 to June 30, 1954. A lengthy and commendable discussion followed. Pertinent suggestions were made concerning methods of accounting and the fiscal year of the Association. Experts on the Council agreed with the auditors of the Association that a cost accounting system should be established.

Moved by Backus and seconded by Kopp that the By-Laws be changed so that the fiscal year of the ASHA be from January 1 to December 31. Passed. The Membership will be mailed a ballot on this proposed amendment to the By-Laws.

Moved by Curtis and seconded by Henrikson that the Report on the Budget be accepted. Passed.

Report of Committee on Association Planning. Steer reviewed some of the important items of the report, including membership growth, net worth forgetting about disbursements, publication and publication policy, and certification.

Moved by Fairbanks and seconded by Kopp that the report be accepted. Passed.

Moved by Fairbanks and seconded by Backus that this Ad Hoc Committee (Committee on Association Planning) be continued in name and in person for one more year. Passed.

President Silverman recessed the meeting until 7:30 p.m.

Moved by Fairbanks and seconded by Kopp that we adjourn at 11:30 p.m. Passed

Report of Committee on Membership. Kopp reported that the Membership Committee processed and approved for Membership 591 persons during the period November 1, 1952 to October 30, 1953.

Moved by Fairbanks and seconded by Powers that the report be accepted. Passed.

Council Consideration of Applications for Membership. Kopp recommended that the Council approve the applications for Membership of three persons who do not hold Bachelor's degrees.

Moved by Fairbanks and seconded by Powers that the recommendation be accepted. Passed.

Report of the Committee on Clinical Certification. McDonald's report contained: a detailed analysis of the delay in processing applications for clinical certification including procedures employed to expedite processing of applications; an analysis of the action taken as of November 16, 1953 on the 844 applications received by the Committee between January 1, 1952 and November 1, 1953; other activities of the Committee Chairman; and an analysis of expenditures for the period November 1, 1952 to November 1, 1953.

Moved by Fairbanks and seconded by Kopp that the report be accepted. Passed. (Extracts from this report are printed following these minutes.)

Recommendations of the Committee on Clinical Certification. McDonald explained the recommendations of his Committee designed to facilitate the processing of applications for clinical certification.

Moved by Backus and seconded by Powers that the Association provide a paid administrative assistant to the Chairman of the Committee on Clinical Certification for one year. Passed.

Moved by Fairbanks and seconded by Backus that Article VIII, Section 11, line 13, of the By-Laws be amended by substituting the word 'two' for the word 'four.' Passed. (A ballot on this proposed amendment to the By-Laws will be mailed to the Membership.)

Moved by Fairbanks and seconded by Curtis that a fee be charged for certification beginning January 1, 1954. Passed.

Report of Ad Hoc Subcommittee on Grandfather Applications. Doerfler reported that his Committee had 350 applications under the Grandfather provision. Sixty-two were completely processed, 167 were in some stage of processing or completed, 105 were in circulation, 35 had just been received from McDonald's office and 148 were being held up pending receipt of missing information from the applicants.

Moved by Fairbanks and seconded by Kopp that the report be accepted. Passed.

Report of Committee on Clinical Standards in Speech. Spriestersbach reported that in addition to the very active correspondence which was maintained among the Committee members during the year, the Committee met twice during the year at the

expense of the Association. The report covers 11 items with recommendations, including: (1) examinations, (2) evaluation of academic programs of training institutions, (3) certification of persons residing outside the United States, (4) handling of thesis credit in evaluating certification applications, (5) credit toward certification requirements for work earned at institutes and non-accredited colleges, (6) sponsors for certification applications, (7) the nature of professional experience to be credited toward certification requirements, (8) dual certification requirements, (9) certification of speech and hearing therapists by the various states, (10) should provision be made to permit provisional advanced certification, and (11) general expense account. This report and Council consideration of it comprises 83 pages of the stenographic report of the meetings. (Extracts from this report are printed following these minutes.)

Moved by Powers and seconded by Chapman that the Council rescind the actions of last year and put the examination function back in the Committee on Certification. Passed.

Moved by Ainsworth and seconded by Peterson that the motion be reconsidered. Passed.

Moved by Fairbanks and seconded by Powers that the Chairman of the Committee on Clinical Standards in Speech be counseled to cease the specific activities on processing of applications and direct that such processing be retained as a function of the Committee on Clinical Certification.

President Silverman suggested that the Committees on Clinical Standards and the Committee on Clinical Certification bring in a recommendation concerning the handling of activities on atypical cases and requested Spriestersbach to continue his report.

Moved by Fairbanks and seconded by Curtis that in the case of applicants who present a thesis which is not given academic credit by the institution in question as a matter of institutional policy, that for the Master's degree, the applicant be credited with an amount in proportion to 6 semester hours, and for the Ph.D. in proportion to 12 semester hours.

Moved by Backus and seconded by Powers to amend the motion limiting it to Advanced Certification. Passed.

Moved by Henrikson and seconded by McDonald to amend the motion by striking the phrase, 'relating to schools that do not allow credit.'

The proposed amendment and the main motion were withdrawn by those who made and seconded them and with the approval of all present.

President Silverman requested that the report be continued at the next Council meeting and recessed the meeting until the arrival of Harold Westlake, Chairman of the Committee on Nominations.

Westlake's report of the Committee on Nominations was received informally by the Council resolved into a Committee as a whole.

Adjourned at 12:40 a.m.

November 24, 1953, 8:00 p.m.

Members present at this meeting were: S. Richard Silverman, presiding, Stanley Ainsworth, Ollie Backus, James A. Carrell, James F. Curtis, Myfanwy E. Chapman, Grant Fairbanks, Ernest H. Henrikson, George A. Kopp, Eugene T. McDonald, Gordon E. Peterson, Margaret Hall Powers, Charles Van Riper, and Harold Westlake.

President Silverman called the meeting to order and asked that the Chairman of the Committee on Clinical Standards in Speech continue with his report.

Report of Committee on Clinical Standards in Speech (cont.). Spriestersbach reported that members of the Committee on Certification, Committee on Clinical Standards in Speech and Committee on Clinical Standards in Hearing had met, as instructed by the President, and formulated an interpretation of paragraph 1 of the report of the Committee on Clinical Standards in Speech as published on page 106 of the March 1953 *Journal*, which pertains to the evaluation of applications for certification in speech from individuals with atypical training and experience. The recommendation of the combined committee was that all executive action on applications for clinical certification be taken by the Committee on Clinical Certification. The Committee on Clinical Standards will review the applications that are sent to it by the Committee on Clinical Certification, formulate the standards that apply and/or prepare an examination upon request and transmit the information and/or examination to the Committee on Clinical Certification for administration and evaluation.

Moved by Backus and seconded by Ainsworth that the recommendation be approved. Passed.

Change in Requirements Governing the Sponsoring of Applications for the Basic Certificate. Moved by McDonald and seconded by Henrikson that persons who hold the academic requirements and the practical requirements for the advanced certificate and hold the basic certificate, may sponsor applications for the basic certificate. Passed.

Moved by Powers and seconded by Carrell that the report of the Committee on Clinical Standards in Speech be accepted. Passed.

Report of Committee on Clinical Standards in Hearing. Doerfler stated that his committee had met in Pittsburgh in conjunction with the Committee on Clinical Standards in Speech and that the recommendations of his committee were incorporated in the joint report of the Committees on Clinical Standards in Speech and Hearing.

Moved by Henrikson and seconded by Powers that the report be accepted. Passed.

Report of the Committee on Speech Correction Fund. Johnson summarized the financial statement of his report which indicated that the balance on November 1, 1952 was $3,407.00 and on October 31, 1953 was $6,466.62. The disbursements were for scholarships of which there were three of $500.00 each. The contribution of the National Society for Crippled Children and Adults was listed as $696.13 as a cash receipt and the cost of their services of staff time was taken out in the expenditures, the amount being equal. The national sorority, Kappa Delta Phi, contributed $1,500.00 last year and they have contributed another $2,000.00 not shown on the statement. Other contributions range from $3.00 to $250.00.

It was the judgment of the Committee that the record of the Speech Correction Fund to date speaks favorably for itself, and that it justifies the active support of the Membership of the American Speech and Hearing Association. Members can give their support primarily in three ways: (1) by giving prospective donors essential information about the Fund, and by directing worthy students to the Fund as a source of scholarship aid; (2) by remembering the Fund in their own contributions budgets; (3) by disseminating information about it to new members of the profession and to the public on appropriate occasions and in a dignified and constructive spirit.

Moved by Henrikson and seconded by Powers that the report be accepted. Passed.

Informal discussion followed on ways and means of informing the Membership of the Fund and eliciting support for it.

Moved by Powers and seconded by Curtis that the Committee on Speech Correction Fund prepare a brief statement to the Membership concerning the purposes of the Fund and solicit in a dignified way contributions to the Fund, this report to be published in the *Journal.* Passed.

Report of the Committee on Ethical Practice. Backus reviewed the work of her Committee, summarized the investigations made, described some of the issues discussed by the Committee and asked for Council guidance concerning specific function.

Moved by Powers and seconded by Ainsworth that the report be accepted. Passed.

Report of the Committee on Terminology. Robbins mailed his report to President Silverman who presented it to the Council. The Committee had been requested to define one term during the past year.

Moved by Peterson and seconded by Van Riper that the report be accepted. Passed.

Report of Committee on Time and Place (cont.). Henrikson, having telephoned as instructed, reported that the November 17-20, 1956 dates at the Conrad Hilton were no longer available and reviewed the open dates at other hotels in Chicago.

Moved by Carrell and seconded by Backus that the dates of November 19-21, 1956 at the Palmer House be approved. Passed.

Report of the Committee on National Registries. No report.

Report of the Committee on Placement Study. Backus reported that the Placement Registry Service was inaugurated in September 1953 as announced in the September issue of the *Journal,* and that the first mailing to employers and Members seeking employment was made on November 16, 1953. She recommended that the Chairmanship be placed in the hands of the person in the Central Office because of the difficulties of acting as Chairman without concrete knowledge of the problems that arise in connection with it.

Moved by Carrell and seconded by Ainsworth that the report be accepted. Passed.

Report of the Committee on Honors. In consideration of the report of the Committee on Honors presented by Powers, the Council awarded the Honors of the

Association to Dr. Sara Stinchfield Hawk and posthumously to Dr. Raymond H. Stetson.

In consideration of the report of the Committee on Honors the following Members were approved for Fellowship in the Association: Elise Hahn, John V. Irwin, Paul D. Knight, Elaine Pagel Paden, and Hildred Schuell.

Report of Committee on Nominations. Westlake presented a slate of nominees for Council consideration.

Moved by Fairbanks and seconded by Kopp that the report be received for consideration. Passed.

In consideration of the report of the Committee on Nominations, the Council approved the following nominees to be presented to the Membership:

President-Elect: Harlan Bloomer, Ernest H. Henrikson

Executive Vice-President-Elect: Stanley Ainsworth, Eugene T. McDonald, S. Richard Silverman

Vice-President-Elect: James A. Carrell, John Snidecor

Editor-Elect: Grant Fairbanks, Robert West

Councilor, to replace Carhart: Hayes A. Newby, Leo G. Doerfler

Councilor, to replace Van Riper: Jon Eisenson, Geraldine Garrison

Report of the Committee on Committees. Powers reported the recommendations for committee membership.

Moved by Fairbanks and seconded by Kopp that the report be accepted. Passed. (This report is printed in full following these minutes.)

Addition to Report of Committee on Clinical Certification. McDonald mentioned that in reviewing the standards he had found that his motion neglected the aspect of supervising practice and that he would like to see that that was included just to keep the record clear about this interpretation of standards.

Moved by McDonald and seconded by Kopp that the following interpretation of clinical certification requirements be made: 'Members who have completed the academic requirements for the advanced certificate and who have been awarded the basic certificate, may supervise the practice training of persons working toward the basic certificate and may serve as sponsors of the professional experience of applicants for the basic certificate.' Passed.

Investment of ASHA Funds. The President instructed the Secretary-Treasurer to confer with appropriate legal advisors to expedite the investment of funds at the earliest possible date.

Fee for Certification. Moved by Fairbanks and seconded by Curtis that the fee for certification be charged as follows: $7.50 at the time of completion of the application, $7.50 at the time of awarding of the certificate, for a total of $15.00. Passed.

Moved by Fairbanks and seconded by Ainsworth that the effective date for the beginning of the payment of certification fees be January 1, 1954 with respect to applications made on or after that date. Passed.

Details of how the money obtained from certification fees should be handled were left to McDonald and Kopp.

Suspension of Registration Fees for Council Members. Moved by Fairbanks and seconded by Carrell that the matter be tabled. Passed.

Approval of Expense of Committee Meetings Preceding 1953 Convention. Vote was taken without motion. Passed.

Budget for 1954. Moved by Kopp and seconded by Fairbanks that the report of the Budget Committee be approved. Passed.

The Budget was amended to include the following:

$500.00 contingent fund for the office of the President.

$500.00 contingent fund for the office of the Executive Vice-President.

$500.00 contingent fund for the Committee on Association Planning.

$3,500.00 for the Committee on Clinical Certification.

22% of the salary of the administrative assistant to the Secretary-Treasurer.

$2,000.00 for the Editor of the *Journal of Speech and Hearing Disorders* for an editorial assistant (1955).

Change in Subscription Price of the Journal. Considerable discussion was held on the need to increase the present $3.50 subscription rate in order to cover increased publication costs.

Moved by Kopp and seconded by Carrell that the subscription price be $5.00 and the effective date be July 1, 1954. Passed.

Meeting adjourned early Wednesday morning.

Business Meetings

November 23, 1953, 9:00 p.m.

President S. Richard Silverman called the meeting to order and explained that his modus operandi would be to communicate to the Members, as best he could, the actions of the Council and provide the Members with an opportunity to ask questions or make comments.

Minutes of the 1952 Convention. Silverman asked for the approval of the Minutes of the 1952 Convention as published in the March 1953 issue of the *Journal*.

Moved by Grant Fairbanks and seconded by Leo G. Doerfler that the Minutes be approved as printed. Passed.

Council Action on Reports of Officers. Silverman began his summary of the Reports of Officers with the report of the Vice-President in charge of convention program.

Ira J. Hirsh commented that future program committees should be instructed that in any meeting of this Association some free time should always be available for scientific papers on any subject relative to speech and hearing and that they should be accepted or rejected solely on the basis of merit.

The reports of the Executive Vice-President and the Secretary-Treasurer were abstracted and mention was made of the proposed change in the fiscal year of the Association, from July 1-June 30 to January 1-December 31, which the Membership would be asked to vote on by mail ballot because it necessitated a change of the By-Laws. The need for a cost accounting system was stressed and the action of the Council on dues for Associates was explained and Membership approval requested.

Moved by Fairbanks and seconded by Margaret Hall Powers that the dues of Associates, as established by the Membership according to the provisions of Article IV of the By-Laws shall, when less than for Members, apply for the first five years of Associateship only, and shall be raised to equal the dues for Members beginning with the sixth year of Associateship: this schedule shall be first applied on January 1, 1955 to all present Associates who affiliated with the Association on or prior to January 1, 1950, and shall prevail thereafter; no member may revert to Associate status and incur a reduction in dues. Passed.

The report of the Editor was reviewed and the Members were urged to read this report, which will be published. Proposals of the Editor, approved by the Council, to change the By-Laws in order to effect a plan for managing the publications of the Association were presented in detail and an expression of opinion of the plan was taken.

Moved by Curtis and seconded by Fairbanks that, for the purpose of securing an informal opinion of the Membership regarding the proposed amendments, the meeting resolve itself into a Committee of the Whole. Passed.

Moved by Fairbanks and seconded by Curtis that the meeting revert to regular session. Passed.

Report of Council Action on Reports of Committees. Silverman mentioned that the chairman of the Committee on Nominations, Harold Westlake, had been stranded in Pittsburgh, thus the usual procedure of presenting the report of this committee at the first business meeting was impossible this year. He abstracted in detail the Council action and contents of the reports of the Committee on Membership, Committee on Clinical Certification, and Committee on Association Planning. He concluded his report by expressing appreciation to Paul D. Holtzman and his Committee on Local Arrangements, by calling attention to the exhibits and the magnificent attendance at the Convention (983 registered at 3:00 p.m.).

Adjourned at 10:20 p.m.

November 25, 1953, 2:00 p.m.

President Silverman called the meeting to order, announced that 1185 persons had registered for the Convention, that another meeting was still in progress so that he would dispose of some non-controversial business to save time. This included reviews of the reports of the Committee on Budget, Committee on Speech Correction Fund, Committee on Ethical Practice, Committee on Terminology, Committee on Time and Place, Committee on Placement Study and Committee on Honors.

Election of Officers and Councilors. In consideration of the report of the Committee on Nominations, the Council presented the following slate of Nominees to the Membership:

President-Elect: Harlan Bloomer, Ernest Henrikson

Executive Vice-President-Elect: Stanley Ainsworth, Eugene T. McDonald, S. Richard Silverman

Vice-President-Elect: James A. Carrell, John Snidecor
Editor-Elect: Grant Fairbanks, Robert West
Councilor, to replace Carhart: Hayes A. Newby, Leo G. Doerfler
Councilor, to replace Van Riper: Jon Eisenson, Geraldine Garrison

Silverman explained the method of balloting and appointed the following tellers: John Keyes, chief teller, John Clancy, Helen Gunderson, William Miller, and Moe Bergman.

Balloting proceeded for each of the offices after a call for nominations from the floor. The following persons were elected:

President-Elect: Harlan Bloomer
Executive Vice-President-Elect: Stanley Ainsworth
Vice-President-Elect: James A. Carrell
Editor-Elect: Robert West
Councilor, to replace Carhart: Leo G. Doerfler
Councilor, to replace Van Riper: Jon Eisenson

Journal of Speech and Hearing Research. Silverman mentioned that it was an oversight that he had not mentioned before the discussion and approval of the Council of a *Journal of Speech and Hearing Research.* He explained that the establishment of this *Journal* required an amendment to the By-Laws and that all Members would have an opportunity to vote on it.

Moved by Ira J. Hirsh and seconded by a Voice that this recommendation of the Council be tabled. A lengthy discussion followed in which the following Members participated: Hirsh, James F. Curtis, Keyes, Ollie Backus, Fairbanks, Robert Goldstein, George J. Wischner, Moe Bergman and William G. Hardy. Passed.

Report of Committee on Clinical Standards. Silverman reviewed the contents of the report, the actions taken by the Council on the recommendations of the Committee, and asked for approval of the actions of the Council.

Moved and seconded by unidentified voices that the Council actions be approved. Passed.

Other Council Actions. Silverman abstracted the reports of the Committee on Clinical Standards in Hearing, the Ad Hoc Sub-Committee of the Committee on Clinical Certification, and mentioned that the Council had: voted to terminate the Committee on Registries, instructed the Secretary-Treasurer to seek necessary legal counsel to create an investment policy for the surplus funds of the Association, allocated funds to offices and committees, established a fee for certification, approved an increase in the cost of the *Journal* for subscribers, discontinued the practice of binding volumes of the *Journal*, and clarified that certification is dropped when Membership is discontinued; reinstated when Membership is reinstated.

Resolutions. In consideration of a portion of the report of the Committee on Honors, the following Resolutions, which had been approved by the Council, were read:

Resolved: That the American Speech and Hearing Association express its deep appreciation to its retiring President, S. Richard Silverman, for his understanding and untiring leadership in the difficult affairs of the Association.

Resolved: That the American Speech and Hearing Association give sincere thanks to its Vice-President and Program Chairman, Margaret Hall Powers, for the tremendous work she has accomplished in that office.

Resolved: That the American Speech and Hearing Association express its sense of thanks and security for the steadfast endurance of its long-time servant and Secretary-Treasurer, George A. Kopp.

Resolved: That the American Speech and Hearing Association express its thanks to Ernest H. Henrikson for his service as Executive Vice-President.

Resolved: That the American Speech and Hearing Association give special thanks and tribute to Grant Fairbanks for the work he has done and the prestige he has brought to the Association in the Journal *that he edits.*

Resolved: That the American Speech and Hearing Association express its regrets with thanks to retiring Members-at-Large of the Executive Council, Raymond Carhart and Charles Van Riper.

Resolved: That the American Speech and Hearing Association express its deep thanks to the Chairman and Members of the Committee on Clinical Certification and of the Ad Hoc Sub-Committee for heroic efforts they have made in accomplishing a task that seemed unaccomplishable.

Resolved: That the American Speech and Hearing Association express its deep appreciation to Paul D. Holtzman and the members of his Committee on Local Arrangements for providing such a splendid setting for the Convention of the Association.

Moved by Miller and seconded by a Voice that the Resolutions be adopted. Passed.

President Silverman turned the gavel over to the incoming President with the comment that, 'It has been a great privilege for me to have served the Association in the past year, and to Margaret Hall Powers, my able successor, I pledge my cooperation.'

President Powers accepted the gavel and replied, 'It is with reluctance and deep humility that I accept the gavel. Speaking as a Member of the Association and as a Member of the Council, I want to express my personal and very deep appreciation for the splendid leadership we have had from Dick Silverman this year.'

Meeting adjourned.

Respectfully submitted,
GEORGE A. KOPP
Secretary-Treasurer

EXTRACT FROM THE REPORT OF THE TREASURER

Balance Sheet
June 30, 1953

Assets

Cash		
Undeposited receipts		$ 614.60
On deposit—National Bank of Detroit		31,847.31
Petty Cash Funds		
Editor's Office	$ 67.11	
Committee on Clinical Certification	661.56	
Wayne University	14.35	
Committees on Clinical Standards	115.05	
Vice-President	161.19	1,019.26
Account Receivable		237.05
Fixed Assets		
Office Equipment	$ 812.73	
Less: Reserve for Depreciation	330.98	481.75
Total Assets		$34,199.97

Liabilities

Capital	
General Fund	$15,033.06
Journal of Speech and Hearing Disorders Fund	11,642.40
Publications Surplus Fund	7,524.51
Total Liabilities	$34,199.97

Balance Sheet
October 31, 1953

Assets

Cash		
Undeposited Receipts		$ 376.11
On deposit—National Bank of Detroit		31,711.67
Petty Cash Funds		
Editor's Office	$ 141.77	
Committee on Clinical Certification	767.90	
Wayne University	−20.78	
Committees on Clinical Standards	100.00	
Vice-President	185.51	1,174.40

Accounts Receivable		857.25
Fixed Assets		
Office Equipment	$ 812.73	
Less: Reserve for Depreciation	358.06	454.67
Total Assets		$34,574.10

Liabilities

Capital		
General Fund	$15,090.89	
Journal of Speech and Hearing Disorders Fund	11,781.70	
Publications Surplus Fund	7,701.51	
Total Liabilities		$34,574.10

REPORT OF THE EDITOR

1. *Editorial Staff.* There were no changes in personnel during the period. The Association's indebtedness to this group mounted steadily during the year. Your Editor hereby commends to you the following: Assistant to the Editor Elaine Pagel Paden; Associate Editors Ainsworth, Brown, Curtis, Kantner, Schuell and Silverman; Assistant Editors Elliott, Matthews, Palmer and Wood; Business Manager George A. Kopp.

2. *Contributions of the University of Illinois.* The substantial support of the editorial offices by the University of Illinois continued during the year through the good offices of President George D. Stoddard and Professor Miodrag Muntyan, Director of the University Press.

3. *Publication of Material.*

Analysis of Journal Content

	March	*June*	*Sept.*	*Dec.*	*Direct. Suppl.*	*Monog. Suppl.*	*1953 Total*	*1952 Total*
Research and Theoretical Material								
Articles	35	60	63	53		33	213	269
Abstracts	9	9	3	5			26	25
	44	69	68	58			239	294
Practical and Business Material								
Articles	23	7	7	15			52	140
Book Reviews	7	6	9	5			27	28
News	5	6	3	3			17	28
ASHA Business	31	22	7	13	102		175	139
Editorial	0	0	0	0			0	3
	66	41	26	36			271	338
Front Matter	2	2	2	2	2	2	10	13
Total	112	112	96	96†	104	35†	555	645*

*Total exclusive of Monograph Supplement, 550.
†Estimated.

4. *Monograph Supplement.* Monograph Supplement 3, Selected Bibliography on the Effects of High-Intensity Noise on Man, by J. C. G. Loring, is in press and should be issued before the end of 1953. This work is an exhaustive supplement to the bibliographies in the Kryter monograph, but does not include them. It was prepared at Psycho-Acoustic Laboratory, Harvard University, under an ONR contract. Part of the publication costs

are being defrayed by the Armed Forces—National Research Council Committee on Hearing and Bio-Acoustics, which is administered through another ONR contract with Central Institute for the Deaf, St. Louis. Monograph Supplement 3 will be distributed routinely to members and subscribers. Single copy price will be fifty cents.

5. *Second Printing of 'Stuttering' by C. Van Riper.* At the request of the NSCCA, the Editorial Staff brought up to date certain informational materials at the end of this booklet, having to do with the two cooperating organizations, preparatory to publication of a Second Printing. This work, originally published in 1948, has been in great demand. The basic text will remain unchanged.
6. *Content of Articles.* In the following table a breakdown has been made into research and theoretical articles versus all other materials. Data are in mean number of pages per year. The first column includes the five years of the present Editor's tenure; the second column is for the two years immediately preceding.

	Pages per Year			
	1949-53		*1947-48*	
	N	%	*N*	%
Research Articles	244	47	169	40
Other Material	274	53	255	60
Total	518	100	424	100

7. *Manuscripts Rejected.* Following is a table showing number of articles rejected during the past five years. The 1953 figure may not be complete.

1949	31
1950	11
1951	15
1952	16
1953	20
Total	93

Bases for rejection:

1. Editorially substandard
2. Work reported obviously unsound
3. Repetitive of earlier work
4. Outside area

8. *Pages Available and Publication Lag.* The Executive Council has never restricted the number of pages available to the Editor. Policies for allotment to publication from member dues provide very adequately for the present and permit every foreseeable need for expansion in the future.

With clean manuscripts ready to be marked for the printer our present lag is approximately three months from date of original submittal to date of issue. This includes editorial evaluation. Naturally this three months figure does not apply to manuscripts in which revisions are required or suggested by the Editor or Associate Editors.

Extract from the Report of the Committee on Clinical Certification

I. Analysis of the delay in processing applications for clinical certification:

A. Believing that certification of clinical competency is one of the most important activities of the Association, this Committee has continued to be deeply concerned about the delays in processing applications for certification. The Committee Chairman has made a detailed analysis of the certification activity since January 1, 1952 and finds the following primary reasons for the delays which have occurred:

1. As reported in the minutes of the December 26, 1951 Council meeting, the Committee on Clinical Certification, in anticipation of a revision of the clinical certification requirements, took no action on those applications which were received during 1951 or those received too late for processing in 1950. These applications were transferred to the present Committee when

it assumed office in 1952. Had these applications been processed under the 1949 standards (which, under the grandfather provision, were used anyway) all these applicants would have been entitled to receive the new type of certification merely by exercising the option described in the minutes of the November 8, 1950 Council meeting. This would have permitted the present Committee to begin with current applications rather than more than one year in arrears.

2. Because a number of other important matters required his attention, the Committee Chairman was unable to begin the actual processing of applications until late in the spring of 1952.

3. Over 80 per cent of the first 600 applications reviewed were so inadequately prepared that it was impossible to give them prompt attention. Each of these applicants has received one and many have received several communications from the Committee.

4. The Committee received a large number of applications from persons with atypical training who were anxious to have their credentials evaluated under the grandfather provision. The processing of these applications proved to be extremely difficult.

5. The Committee members have regular full-time positions and other professional responsibilities and interests. Even though they all gave a disproportionate amount of their time to this assignment, it was not possible to give enough time to handle the large number of applications with dispatch. It is difficult to be critical of those members who delayed the routing of applications since there was a consistent tendency for the member who held the applications for the longest period to make the most thorough and accurate evaluation of the credentials.

6. The By-Laws require that each application be reviewed by at least five members. Applications for dual certification must be reviewed by all eight committee members. With the committee members located in widespread geographic areas, several weeks are required just for the mechanics of circulating applications.

7. The Chairman's office has become a serious bottleneck. Even though the Committee Chairman has almost routinely worked 60 hours per week during the past two years and has neglected other professional and personal interests in order to devote the major part of his time to his Association activity, the volume of work is so great that it is impossible for him to give prompt attention to correspondence and to the review of applications.

8. As the previous Chairmen of the Credentials Committee have pointed out, a large number of the Advanced Certificate holders fail to carry out their obligations as sponsors.

• • •

V. Recommendations:

A. This Committee feels that all recommendations for changes in or interpretations of the standard should properly come from the Standards Committees. We have, therefore, referred all such problems and our suggestions for handling them to the Chairmen of these Committees for their consideration.

B. It has come to our attention that revisions of certain features of the certification standards may be proposed at this meeting. This Committee recognizes and will carry out its duty to apply whatever standards the Association adopts. We would strongly recommend, however, that no major revisions be made without first having the Standards Committees thoroughly study the problems involved.

C. Our experience in reviewing requests for clinical certification during the past year suggests that the Council might be asked to consider some special requests for certification. We would point out that the Standards Committees have tried to develop procedures which will enable any qualified person to become certified. We would recommend that any person seeking certification be expected to meet the requirements as described in the June, 1952 *JSHD* or those prepared especially for applicants with atypical training and experience. These standards are described in the March, 1953 *JSHD*. We would urge the Council to be extremely cautious about waiving the standards for individual applicants. Rather, we would advise that if inequities are found to exist, principles should be developed which can be applied more broadly.

D. It is recommended that the budget for this Association activity be increased as indicated below:

Half-time administrative assistant	$2000.00
Part-time secretary	1000.00
Other expenses	500.00
Total	$3500.00

Apparently both the Editor's office and the Secretary-Treasurer's office have been able to locate assistants who have learned to

handle many of the routines of their offices. It should be possible to find an assistant who could prepare the application materials for the committee's evaluations, compare course listings with transcripts and handle routine correspondence, thus permitting the Committee Chairman to devote his time to problems requiring judgments and other high level attention. With this staff and possibly a change in the evaluation procedure, the Committee should be able to handle efficiently between four and five hundred applications per year.

E. It is recommended that action be initiated to amend the By-Laws in such a way as to require that each application shall be acted upon by at least *two* (instead of four) members holding Advanced Certification in the area (speech or hearing) in which the applicant is seeking certification, plus one other Committee member. We would recommend that the total number of Committee members remain at eight, (four in speech and four in hearing). This amendment would not only reduce the load of individual Committee members, but would also expedite the processing of applications.

F. It is recommended that a plan be adopted which will insure the inclusion of some experienced members on each of the sub-committees. Perhaps, beginning in 1954, each year one new member should be appointed to each sub-committee to serve four-year terms. If such a plan is adopted, two members of each sub-committee should complete their terms this year. One replacement should be appointed for four years and the other for three years. It is suggested that the present sub-committee chairmen be regarded as having originally received a four-year appointment and the remaining committee member as having been appointed for a three-year term.

G. It is further recommended that if this plan for appointing new committee members is approved, the Association should arrange for them to meet early in 1954, at Association expense. The major purposes of this meeting would be to train the committee members in the techniques of evaluating applications and to familiarize them with the processing procedures.

H. It is recommended that the Association establish a certification fee. It is our belief that such a fee would serve at least two purposes:

1. It would help defray the actual costs of the certification activity.

2. It would probably result in an improvement in the quality of the applications submitted to the Certification office.

I. It is recommended that the Association study the problem of educating the holders of Advanced Certificates to recognize and fulfill their obligations to the Association and to the applicants for whom they serve as sponsors. It must be recognized that regardless of what revisions might be made in the standards or what modifications might be made in the processing procedures, the Association's certification program can never work effectively or efficiently unless the sponsors conscientiously carry out their responsibilities.

Extract from the Joint Report of the Committees on Clinical Standards in Speech and Clinical Standards in Hearing

Recommendations:

1. That a flat fee of $25 be charged for the examination [when used in lieu of academic credit].

2. Since accreditation is primarily of concern to the Association as a means of determining the competence of the individual clinician, the Committee recommends that before accreditation of institutions be undertaken, alternative procedures for determining competence be considered, e.g., oral and written examinations and demonstration of clinical competence. It further recommends that if any accreditation of institutions be considered, such consideration shall be coordinated with the activities of regional accrediting agencies.

3. Questions have been raised as to the certification of individuals who have been trained and/or are residing outside the United States. It is the opinion of the Committees on Clinical Standards that if these individuals can demonstrate fulfillment of the Association's requirements, they should be certified at the appropriate levels.

4. Thesis credit should be allowed if the research is relevant to the area in which the applicant wishes to be certified. The maximum number of hours for thesis credit shall be as follows: For the Master's degree —6 semester hours; For the Ph.D. degree— 12 semester hours.

5. a. The Committees recommend that no credit be allowed for work done at a non-accredited institution if it comprises essentially the individual's entire training. If, however, such individuals present additional credit from accredited institutions, consideration should be given to accepting a portion

of the credit earned at the non-accredited institution. The amount of such credit shall be determined on the merits of each individual case.

b. The Committees recommend that the Association encourage attendance at Institutes but know of no feasible way to administer the handling of credit for such attendance except as accredited training institutions accept the work for regular academic credit.

6. The Committees recommend that present requirements [concerning sponsors of applicants] be continued. They urge that persons holding Advanced Certification be encouraged to extend their sponsorship activities to include trainees other than those affiliated with their own programs.

7. The responsibility for informing the Clinical Standards Committees of the nature of specific professional experience shall rest with the sponsor. Such information shall be considered by the Standards Committees in determining credit for experience to be granted.

8. The Chairman if the Committee on Clinical Certification reports that the provisions approved for applicants for dual certification under the Grandfather Provision have proved satisfactory. Since the Committees feel that these dual requirements are professionally sound, it is recommended that the requirements be approved for applicants for dual certification under the new standards.

9. The Committee recommends that the Standards Committees prepare the following materials to be sent to the State Superintendent of Public Instruction, the Head of the Certification Division and the Director of Special Education (where appropriate) of the various states and that the materials be sent over the signature of an appropriate officer of the Association:

a. A copy of the standards of Certification by the Association.

b. A short explanation of the standards.

c. A letter of transmittal suggesting that the agencies may find the statement of standards helpful and expressing the willingness of the Association to cooperate in interpreting the standards. This letter might also include a listing of the major activities of the Association.

10. [In regard to the granting of provisional advanced certification] Inasmuch as Advanced Certification represents not only a high level of professional training but also carries with it responsibilities for clinical supervision of trainees, the Committees recommend that the present requirements be maintained. Present holders of advanced certificates should be encouraged to provide necessary assistance to those who are responsible for training students and who do not as yet hold Advanced Certificates.

Committee Appointments

Standing Committees

Committees (Officers; President-Elect, Chairman)

1. Grant Fairbanks
2. Ernest H. Henrikson
3. George A. Kopp
4. Gordon E. Peterson
5. Margaret Hall Powers
6. Harlan Bloomer, Chairman

Nominations (Four appointive members; most recent ex-President, Chairman)

1. Charlotte B. Avery
2. T. D. Hanley
3. Martin F. Palmer
4. Charles Van Riper
5. S. Richard Silverman, Chairman

Budget (President; Editor; Secretary-Treasurer, Chairman)

1. Grant Fairbanks
2. Margaret Hall Powers
3. George A. Kopp, Chairman

Liaison (President; Vice-President; Secretary-Treasurer; Editor; Chairman of Committee on Clinical Certification; Chairman of Committee on Ethical Practice; Executive Vice-President, Chairman)

1. Ollie Backus
2. Grant Fairbanks
3. George A. Kopp
4. Eugene T. McDonald
5. Gordon E. Peterson
6. Margaret Hall Powers
7. Ernest H. Henrikson, Chairman

Convention Program (Vice-President-Elect; appointive members; Vice-President, Chairman)

1. John W. Black
2. John L. Boland
3. James A. Carrell
4. Allan C. Goodman
5. Ira J. Hirsh
6. Elvena Miller
7. Wilbur E. Moore
8. Jesse J. Villarreal
9. Gordon E. Peterson, Chairman

Membership (One member each from speech disorders, hearing disorders, and basic speech and hearing sciences; Secretary-Treasurer, Chairman)

1. Margaret McCausland

2. James M. Mullendore
3. Dorothy H. Sherman
4. George A. Kopp, Chairman

Honors (Five members who are Fellows; President-Elect, Chairman)

1. Wendell Johnson
2. Delyte W. Morris
3. Clarence T. Simon
4. Lee E. Travis
5. Robert W. West
6. Harlan Bloomer, Chairman

Clinical Standards in Speech (Four members who hold Advanced Clinical Certificate in speech; appointive Chairman)

1. Stanley H. Ainsworth
2. Mamie Josephine Jones
3. Thelma A. Knudson
4. Jack Matthews
5. Duane C. Spriestersbach, Chairman (1954-56)

Clinical Standards in Hearing (Four members who hold Advanced Clinical Certificate in hearing; appointive Chairman)

1. Merle Ansberry
2. Moe Bergman
3. Hayes A. Newby
4. Miriam D. Pauls
5. Frank M. Lassman, Chairman (1954-56)

Clinical Certification (At least eight appointive members, all holding Advanced Clinical Certificate, four in speech, four in hearing; elected Chairman)

1. Oliver Bloodstein
2. John H. Gaeth
3. Harriet L. Haskins
4. Ruth Beckey Irwin
5. Harriet G. Kopp
6. Frank M. Lassman
7. Darrel J. Mase
8. Gretchen M. Phair
9. Charlotte G. Wells
10. D. Kenneth Wilson
11. Eugene T. McDonald, Chairman (1952-55)

Ethical Practice (Four members, one each from speech, hearing, and basic speech and hearing science; elected Chairman)

1. Raymond T. Carhart (1954-55)
2. John V. Irwin (1954-55)
3. Darrel J. Mase (1953-54)
4. Jane Dorsey Zimmerman (1953-54)
5. Ollie L. Backus, Chairman (1953-55)

Terminology (Five members; appointive Chairman)

1. Norton Canfield (1951-54)
2. Elaine Pagel Paden (1954-57)
3. William G. Peacher (1953-56)
4. John C. Snidecor (1952-55)
5. Samuel D. Robbins, Chairman (1954-57)

Time and Place (Three appointive members; Executive Vice-President, Chairman)

1. Stanley Ainsworth
2. Louise D. Davison
3. Wallace A. Goates
4. Ernest H. Henrikson, Chairman

Special Committees

Speech Correction Fund

1. Herbert K. Baker
2. Sara Stinchfield Hawk
3. George A. Kopp
4. Mack D. Steer
5. Robert W. West
6. Wendell Johnson, Chairman

Association Planning

1. Wendell Johnson
2. Martin F. Palmer
3. Mack D. Steer, Chairman

Clinical Certification, Ad Hoc Sub-Committee

1. Ruth Beckey Irwin
2. Claude E. Kantner
3. Jack Matthews
4. Martin F. Palmer
5. Leo G. Doerfler, Chairman